

1 STATE OF MINNESOTA DISTRICT COURT
2 COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT
3 - - - - -
4 The State of Minnesota,
5 by Hubert H. Humphrey, III,
6 its attorney general,
7 and
8 Blue Cross and Blue Shield
9 of Minnesota,
10 Plaintiffs,
11 vs. File No. C1-94-8565
12 Philip Morris Incorporated, R.J.
13 Reynolds Tobacco Company, Brown
14 & Williamson Tobacco Corporation,
15 B.A.T. Industries P.L.C., Lorillard
16 Tobacco Company, The American
17 Tobacco Company, Liggett Group, Inc.,
18 The Council for Tobacco Research-U.S.A.,
19 Inc., and The Tobacco Institute, Inc.,
20 Defendants.
21 - - - - -

22 TRANSCRIPT OF PROCEEDINGS
23 VOLUME 8, PAGES 1363 - 1518
24 JANUARY 29, 1998
25

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DIRECT EXAMINATION - DR. RICHARD HURT

1 P R O C E E D I N G S.
2 THE CLERK: All rise. Ramsey County
3 District Court is again in session, the Honorable
4 Kenneth J. Fitzpatrick now presiding.
5 (Jury enters the courtroom.)
6 THE CLERK: Please be seated.
7 (Witness resume stand.)
8 THE COURT: Good morning.
9 (Collective "Good morning.")
10 THE COURT: I apologize for the delay. I
11 was at the swearing in of our new Chief Justice, and
12 as you might suspect, lawyers tend to get wordy, and
13 that's why I was late.
14 Counsel.
15 MR. CIRESI: A shock, Your Honor.
16 (Laughter.)
17 THE WITNESS: I noticed.
18 BY MR. CIRESI:
19 Q. Doctor, when we recessed yesterday, we were
20 addressing the issue of the defendants' research into
21 nicotine technology, specifically as it related to
22 the pH of nicotine. Do you recall that?
23 A. I do.
24 Q. Okay. Could you turn, please, to Exhibit 12505
25 in volume one of the exhibit books in front of you.

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1 A. Okay.
2 Q. This is an RJR document dated September 8th,
3 1980 to Dr. Roy E. Morse, M-o-r-s-e, vice-president

4 of R&D, regarding a memo on nicotine additive from
5 the Horrigan, H-o-r-r-i-g-a-n, memo. Mr. Horrigan
6 was at one point president of RJR. And it's from
7 Alan Rodgman.

8 Have you reviewed this document?

9 A. I have.

10 Q. This is one of the documents you reviewed that
11 forms the basis of your opinions?

12 A. It is.

13 Q. Is it representative of other documents that you
14 reviewed on this issue?

15 A. It -- it does.

16 MR. CIRESI: Your Honor, we would offer
17 Exhibit 12505.

18 MR. BERNICK: No objection, Your Honor.

19 THE COURT: Court will receive Exhibit
20 12505.

21 BY MR. CIRESI:

22 Q. The first page of this indicates it's from Alan
23 Rodgman, dated September 8th, 1980, to Roy E. Morse,
24 the subject is "Clarification of 07/22/80 Memo on
25 Nicotine Additive." And in the introductory

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1 paragraph Mr. Rodgman states that Roy Morse could
2 forward this to Mr. Horrigan and Mr. Tompson, and if
3 there's parts that are still not clear, he would get
4 back to him.

5 I want to direct your attention then to the next
6 page -- that's the cover memo -- and go to the memo
7 itself.

8 Can we see the whole page, please?

9 If you would then direct your attention, sir, to
10 the first paragraph, it states, "My July 22
11 memo assumed that the reader was familiar with
12 PM's" -- which is Philip Morris -- and our past
13 activities in developing nicotine technology. To put
14 the information in that memo in perspective, the
15 following background is presented:

16 "Development of nicotine technology involves the
17 study of a host of factors, chief among which are

18 "a. 'Tar' delivery.

19 "b. Nicotine delivery.

20 "c. T/N ratio."

21 What does that refer to?

22 A. Tar-and-nicotine ratio.

23 Q. And "d. Nicotine satisfaction: This is
24 dependent on puff count, puff volume, T/N ratio,
25 total nicotine delivery, nicotine delivery per puff,

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1 plus 'free' nicotine per puff. This latter in turn
2 is related to nicotine delivery per puff and smoke
3 pH."

4 And then there's a footnote down below, "a
5 Most, if not all, nicotine in tobacco is present at a
6 salt, the reaction product of nicotine and an acid,
7 generally referred to as 'bound' nicotine; most of
8 the nicotine in smoke is present as a salt or 'bound'

9 form and a small fraction is present as 'free'
10 nicotine. The percentage 'free' nicotine depends on
11 the smoke pH. 'Free' nicotine is absorbed more
12 rapidly by the smoker than is 'bound' nicotine."

13 Now with respect to that subject matter, free
14 nicotine and the rapid absorption, is that consistent
15 with what you testified to here earlier in your
16 understanding of the potential of free nicotine to
17 get into the blood system faster?

18 A. It is. And -- and as I said, I think I said
19 yesterday the addictive potential of an addictive
20 drug relates to how fast it gets in, the
21 concentrations that -- that reach the brain.

22 Q. Doctor, I'd like to direct your attention to the
23 last paragraph on this page, and specifically the
24 last phrase of the last sentence, which reads as
25 follows: "...our approach has been primarily one of

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1 controlling the smoke parameters noted above by blend
2 formulation and denicotinization rather than by
3 addition or transposition of nicotine."

4 Did you investigate any part of that, how -- the
5 blend formulations and denicotinization of RJR or any
6 of the other defendants?

7 A. No. That's really outside the scope of what I
8 did. I really was focused on nicotine, nicotine
9 delivery, the addictive properties and the free base
10 nicotine as it relates to addiction.

11 Q. Okay. Thank you.

12 Can you direct your attention now, doctor, to
13 Exhibit 10095, which is in the same volume.

14 A. Okay.

15 Q. This is a Lorillard document dated February 8th,
16 1973 from A. M. Ihrig, I-h-r-i-g, a senior research
17 scientist, to Mr. C. L. Tucker, Jr., director of
18 product development.

19 Have you reviewed this document in preparing to
20 testify?

21 A. Yes, I have.

22 Q. Is it one of the documents you're relying on to
23 form part of the basis of your opinion?

24 A. It is.

25 Q. Is the information therein consistent with and
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1 representative of other documents that you reviewed
2 of the defendants during the course of your
3 investigation?

4 A. It is.

5 MR. CIRESI: Your Honor, we would offer
6 Exhibit 10095.

7 MR. BERNICK: No objection.

8 THE COURT: The court will receive 10095
9 BY MR. CIRESI:

10 Q. The first page is -- first along the right-hand
11 column we've got "CONFIDENTIAL: MINNESOTA TOBACCO
12 LITIGATION," and the title of this document is "pH of
13 Particulate Phase."

14 What's particulate phase, doctor?
15 A. Well it's the tar aerosol mixture, basically
16 water, tar and other -- other chemicals in the
17 particulate phase. It's the phase you can actually
18 see when you blow smoke out, those are the
19 particles.
20 Q. And the summary of the abstract says, "The pH of
21 the particulate matter for wide variety of little
22 cigars, cigarettes special tobaccos were determined.
23 Some of the factors affecting smoke pH are
24 discussed."

25 And this memorandum went to a number of
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1 individuals, one of whom is Dr. A. W. Spears, who is
2 the current CEO of Lorillard.

3 Could you turn, then, to the second page of this
4 document, and I'd like to direct your attention to
5 the first paragraph. If we could first see the whole
6 page, and then we'll pull up the first paragraph.

7 "The pH of tobacco smoke significantly affects
8 the aroma and physiological properties of cigarettes
9 and cigars. Generally speaking, cigarette smoke is
10 acidic with a pH between 5 to 6.8 while cigar smoke
11 is basic, having a pH in the range of 7.0 to 8.5.
12 Nicotine in alkaline cigar smoke is more readily
13 absorbed in the lungs and mouth because of the higher
14 concentration of nicotine in the form -- in the free
15 or unprotonated form."

16 Is "unprotonated" another term for free
17 nicotine?

18 A. That's correct.

19 Q. And is this document consistent with documents
20 of the defendants that you reviewed?

21 A. Yes, it is.

22 Q. And if you go into the next paragraph, the last
23 sentence, there's a reference to, "Furthermore, the
24 cigarette brands which are enjoying the largest sales
25 increase generally have smoke pH's in the 6.5 to 7.0

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1 range."

2 Did you find any other references to the sales
3 related to the pH factor of cigarettes during your
4 review of the defendants' memoranda and
5 correspondence?

6 A. There were many such documents.

7 Q. If you could, now, doctor, I'd like you to go
8 back to a document that we reviewed yesterday -- it's
9 in the same volume, it's Exhibit 13155 -- and you'll
10 recall that was a secret memorandum by Mr.
11 Teague -- or Dr. Teague of RJR.

12 A. Okay.

13 Q. Again, the title of that document is
14 "IMPLICATIONS AND ACTIVITIES ARISING FROM THE
15 CORRELATION OF SMOKE pH WITH NICOTINE IMPACT, OTHER
16 SMOKE QUALITIES, AND CIGARETTE SALES."

17 Can you turn to the page which has Roman numeral
18 II, "HISTORICAL DATA, TRENDS, AND BRAND COMPARISONS."

19 A. Okay.
20 Q. First of all, is there reported here by Dr.
21 Teague that there was -- he was noticing a difference
22 between the pH between Marlboro brands and his own
23 brands?
24 A. That's correct.
25 Q. And is that in the first paragraph where he
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1 reports, "It soon became apparent that in recent
2 years, corresponding to recent sales performance, the
3 most significant difference between our brands,"
4 that's RJR, "and Philip Morris brands and Kool has
5 been in the area of smoke pH?"
6 A. That's correct. That's what it says.
7 Q. And in this memoranda, in that section Roman
8 numeral II, does Dr. Teague report that from RJR's
9 standpoint all evidence indicates that the relatively
10 high smoke pH shown by Marlboro and other Philip
11 Morris brands and Kool is deliberate and controlled?
12 A. That's what it says.
13 Q. And that's at the -- I guess it's about the
14 second-to-the-last paragraph; is that correct?
15 A. That's right.
16 Q. Second-to-the-last sentence.
17 A. Second-to-the-last sentence, right.
18 Q. And can you turn, then, to the next page -- we
19 saw a part of that yesterday, -- under Roman numeral
20 III, "SMOKE pH AND 'FREE' NICOTINE." And does Dr.
21 Teague report in that paragraph the smoke pH of
22 various brands, including Marlboro and Kool and
23 Winston and Salem?
24 A. That's correct.
25 Q. I'd like to read that for a minute and ask you a
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1 couple questions. "Marlboro and Kool deliver about
2 the same amounts of total smoke nicotine as do our
3 comparable brands. However, Marlboro smoke is
4 typically at pH between 6.8 to 7.3, and Kool smoke is
5 typically at 6.4 to 6.6, as compared with WINSTON
6 smoke at pH 5.8 to 6.0 and SALEM smoke at pH 6.0 to
7 6.2."
8 Now first of all, that pH, is that the scale of
9 zero to seven -- or 14 that we were talking about?
10 A. Correct. But the changes that we talked about
11 yesterday, you go a small change on the pH scale,
12 it's a logarithmic scale, so a change of one unit is
13 a ten-fold increase. So a difference between 5.8 and
14 6.8 is ten times different.
15 Q. Okay. And when Dr. Teague here was referring to
16 the same amounts of total smoke nicotine and then he
17 differentiated the pH, what is total smoke nicotine?
18 A. That would be just the measure of all the
19 nicotine in the smoke.
20 Q. Is that referred to as the delivery?
21 A. I think so, yes.
22 Q. Okay. Now he goes on, then, to say, "Thus,
23 Marlboro and Kool contain -- smokes contains more

24 'free' nicotine than our comparable brands, hence we
25 would be expected to show more instantaneous nicotine
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1 'kick' than our brands."
2 Did you see that in other documents of the
3 defendants?
4 A. Yes. Several documents.
5 Q. And if you could turn to page four of this, and
6 specifically -- see the whole page first, there you
7 go -- and we want to go down to Roman numeral VII as
8 soon as we see the whole page, and this part of the
9 memo is entitled "RESEARCH ACTIVITIES, CURRENT AND
10 PLANNED," and in the very first sentence there does
11 Dr. Teague report that the research that's been
12 conducted by RJR has been collected, correlated,
13 interpreted and described to management, data on
14 smoke pH of various brands?
15 A. That's what it says.
16 Q. Can you now turn to Exhibit 14009. It is a
17 Lorillard document regarding smoke pH.
18 Is this one of the documents that you've
19 reviewed during the course of preparing to testify?
20 A. Yes, it is.
21 Q. And does it form part of the basis of your
22 opinion?
23 A. It does.
24 Q. And is it consistent with the subject matters of
25 other documents that you've reviewed of the

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1 defendants?
2 A. It -- it does.
3 Q. Now this document is a presentation by Dr.
4 Spears, the current CEO of Lorillard?
5 A. That's correct.
6 Q. Can you go, please, to page three of this
7 document, and specifically the second full paragraph
8 where Dr. Spears is reporting on the research
9 activities of the document.
10 MR. CIRESI: Before we do that, I'm going
11 to offer the document, which is Exhibit 100095.
12 Excuse me.
13 MR. BERNICK: No objection, Your Honor.
14 THE COURT: Excuse me, counsel. What's the
15 number?
16 MR. CIRESI: It's the wrong number, Your
17 Honor. 14009.
18 THE COURT: Court will receive 14009.
19 BY MR. CIRESI:
20 Q. If you go to page three then, doctor --
21 A. Okay.
22 Q. -- and direct your attention to the second full
23 paragraph.
24 A. Okay.
25 Q. And in that paragraph does Dr. Spears report on

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1 the research activities on the physiological element
 2 concerned with nicotine that had been undertaken by
 3 Lorillard?
 4 A. That's -- that's what he says, yes.
 5 Q. And is one of those factors the pH dependence,
 6 which you see in number two?
 7 A. Correct.
 8 Q. And with regard to that he states "fraction of
 9 inhaled nicotine which is deposited in the
 10 respiratory tract, paren, pH dependence, close
 11 paren." What is he referring to there, sir?
 12 A. Well the pH dependence would -- would determine
 13 what fraction of the nicotine is free base nicotine.
 14 The higher the pH, the more free base nicotine will
 15 be present, and that has to do with the absorption of
 16 the nicotine.
 17 Q. Okay. And does he relate to that in subpart one
 18 of that paragraph where he says "absorption rate into
 19 the bloodstream, once the nicotine has deposited on
 20 the respiratory tract?"
 21 A. Correct. That's one of the factors as well.
 22 Q. Can you now direct your attention to Exhibit
 23 11903, which is in volume one.
 24 A. Okay.
 25 Q. Now this is Liggett document, doctor, dated
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1 12-16-1971?
 2 A. That's correct.
 3 Q. The title is "DEVELOPMENT OF A CIGARETTE WITH
 4 INCREASED SMOKE pH?"
 5 A. Yes.
 6 Q. And is this one of the documents that you
 7 reviewed with respect to your testimony in this case?
 8 A. It is.
 9 Q. Is it representative of other documents that you
 10 reviewed with respect to this subject matter, smoke
 11 pH?
 12 A. It is.
 13 MR. CIRESI: Your Honor, we'd offer Exhibit
 14 11903.
 15 MR. BERNICK: No objection, Your Honor.
 16 THE COURT: The court will receive 11903.
 17 BY MR. CIRESI:
 18 Q. We're going to first put up the title page, and
 19 I know the Bates numbers on these were reversed, that
 20 sometimes happens when documents are produced, so we
 21 will go to the first page first even though it's the
 22 second page of the document. All right?
 23 On that we see the title "DEVELOPMENT OF A
 24 CIGARETTE WITH INCREASED SMOKE pH."
 25 A. Yes.

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1 Q. And in the first paragraph there, "SUMMARY OF
 2 PROGRESS," is it indicated there that Liggett was
 3 researching this issue of smoke pH?
 4 A. They were.

5 Q. Okay. And let me read that -- that portion.
6 "Increasing the pH of a medium in which nicotine is
7 delivered increases the physiological effect of the
8 nicotine by increasing the ratio of free base to acid
9 salt form, the free base form being more readily
10 transported across physiological membranes." Let me
11 stop right there.

12 When we were talking about the lung yesterday,
13 is that a physiological membrane?

14 A. It is.

15 Q. "We are pursuing this project with the eventual
16 goal -- goal of lowering the total nicotine present
17 in smoke while increasing the physiological effect of
18 the nicotine which is present, so that no
19 physiological effect is lost on nicotine reduction."

20 Can you tell me what was being discussed there?

21 A. Well in terms of the nicotine delivery, this was
22 an effort to maintain or actually enhance the
23 delivery of free base nicotine so that it continued
24 to have the physiological effect, which is the effect
25 on the brain and the central nervous system we talked

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1 about yesterday. So it's just a way of changing the
2 form of the nicotine, increasing the amount of free
3 base nicotine available to the alveolar capillary
4 membrane so that there is more available to cross
5 that membrane to get into the bloodstream to get to
6 the brain faster.

7 Q. Now doctor, during this period of time, 1971,
8 were the cigarette manufacturers reducing tar and
9 nicotine -- tar and nicotine in their cigarettes?

10 A. Well that was what was indicated earlier, and --
11 and that was the graph, I think, that one of the
12 people showed on the opening statements, that the
13 delivery of tar and nicotine was reduced over time.

14 Q. Okay. Now then this paragraph here relates to
15 when you're lowering the tar and nicotine, how you
16 keep the kick up so that you get the physiological
17 effect; is that what's being referred to?

18 A. That's exactly what's being described here. So
19 if you have more free base nicotine available, even
20 though there may be less delivery, more free base
21 nicotine gets into the system faster, gets to the
22 central nervous system faster, and therein lies the
23 addictive potential of the nicotine.

24 Q. And if -- if we could go, then, to the second
25 page of this memorandum with regard to Liggett, did

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1 Liggett run into a problem with its filter regarding
2 this issue?

3 A. That's correct. It had a different filtering
4 mechanism that apparently was not -- not what they
5 wanted it to be.

6 Q. If we could look at the -- starting on the third
7 line, "It was found that the additive increased
8 tobacco pH and unfiltered smoke pH, but that the
9 L&M" -- Liggett & Myers -- "filter had a buffering

10 effect on the smoke so that there was no observable
11 filtered smoke pH change." Do you see that?
12 A. Yes.
13 Q. Is that what you were just referring to?
14 A. Yes, that's correct.
15 Q. And does the memo then reflect that Liggett
16 tried another filter on this cigarette and found that
17 the cigarette with that filter then did exhibit the
18 expected increase in tobacco and smoke pH?
19 A. That's correct.
20 Q. And that's at the -- I think it's the
21 third-to-the-last line which reads as follows --
22 They had put an empty-cavity Lark filter on the
23 cigarette; is that right?
24 A. Right.
25 Q. And then it reads, "These cigarettes exhibited
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1 the expected increase in tobacco and smoke pH." Is
2 that correct?
3 A. Right.
4 Q. And from your review of the documents, did you
5 find that filters could have an effect based on what
6 the defendants' research regarding the smoke, tar or
7 nicotine that's delivered?
8 A. That's correct.
9 Q. Can you direct your attention now, doctor, to
10 Exhibit 12223, which is in the same volume of
11 exhibits.
12 A. Okay.
13 Q. And this is a B.A.T product development review,
14 the date of it is June 1988, the title is "The
15 Significance of pH in Tobacco and Tobacco Smoke," the
16 author is Mr. D. E. Creighton, C-r-e-i-g-h-t-o-n, a
17 research scientist, and it's issued by Dr. T. Hirji,
18 H-i-r-j-i, who was project manager for marketing at
19 one time, and also in R&D for B.A.T. Company Ltd.
20 Have you reviewed this document before, sir?
21 A. I have.
22 Q. And is this document one of the documents that
23 forms the basis of your opinion?
24 A. It does.
25 Q. And is it consistent with other documents that
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1 you saw of the defendants with respect to this pH
2 issue?
3 A. It -- it does.
4 MR. CIRESI: Your Honor, we would offer
5 Exhibit 12223.
6 MR. BERNICK: No objection, Your Honor.
7 I'd like to note for the record, this is a BATCo
8 document.
9 THE COURT: The court will receive 12223.
10 BY MR. CIRESI:
11 Q. Can we go to the first page. It says "Product
12 Development Review," and down in the lower left-hand
13 corner, if we could get that up a little, bring that
14 in, there is a research and development stamp and

15 then a logo of B.A.T, B-A-T, and it says "This review
16 must not be copied or shown to unauthorized persons."
17 If we go on to the next page, this is the title
18 page. If we could move up just a little bit. There
19 we go. Little bit more so we can see the upper
20 right-hand.

21 Up there in the upper right-hand corner is the
22 date of June of 1988, and the title is "The
23 Significance of pH in Tobacco and Tobacco Smoke," and
24 we see the author and who it was issued by, and if we
25 could go down to the bottom -- counsel I believe just
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1 referenced the fact this was a B.A.T. Company Ltd.
2 document. Right above that does it say it's also
3 what's been referred to as BAT (U.K. and Export),
4 Ltd.? I believe counsel always went "BATUKE," put
5 the quotation marks up there. Does it also indicate
6 that?

7 MR. BERNICK: Sure does.

8 I think it might be -- with Your Honor's
9 indulgence to explain to the jury, that the logo that
10 appears on the bottom is the logo that was placed on
11 the document in connection with its production in
12 this case; that is, it was produced by BATCo, and
13 that's why it appears there. It's kind of like the
14 Bates stamp, it's a way of indicating the source of
15 the document.

16 MR. CIRESI: So that, Your Honor, it was
17 produced by BATCo in this litigation from their
18 files, but it also is a BATUKE document.

19 MR. BERNICK: It was generated by BATUKE,
20 yes.

21 THE COURT: Let's move on, counsel.
22 BY MR. CIRESI:

23 Q. Now can we go to the first page, which is
24 entitled "The Significance of pH in Tobacco and
25 Tobacco Smoke." First of all, in the first

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1 paragraph, is there a definition of pH?
2 A. Yes, there is. It's basically the one we talked
3 about yesterday.

4 Q. Okay. And in here it's talking about the
5 logarithmic nature of the pH scale.

6 A. That's correct.

7 Q. And it's showing that that means that for one pH
8 there's a ten-fold change in acidity or alkalinity;
9 is that correct?

10 A. Right, that's correct.

11 Q. And that's the issue you were talking about
12 yesterday?

13 A. Yes. Small changes in pH would make big changes
14 as far as the hydrogen ion concentration.

15 Q. If you could go to page two, is there reported
16 there the pH of tobacco for various different types
17 of tobacco and showing typical values of pH?

18 A. That's correct.

19 Q. We have flue-cured at 5.45, air cured or burley,

20 5.8, oriental at 4.9 and Maryland at 6.60; is that
21 right?
22 A. Yes.
23 Q. And if you could direct your attention, then, to
24 page three, is there reported at that page by Mr.
25 Creighton the effects of pH on smoke?

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1 A. Yes. It's in the middle of the page.
2 Q. Okay. And what is reported there in this
3 document?
4 A. Well it just shows the -- the range of pH as
5 it -- as it relates to free base nicotine, is -- is
6 basically what it shows.
7 Q. And is there then a definition of free base
8 nicotine as extractable or unbound nicotine?
9 A. It does. But the first sentence I guess is
10 probably the most important, "Free base nicotine is
11 the most chemically and physiologically active form
12 because it is most rapidly absorbed. It's more
13 rapidly absorbed than nicotine, it says, because it
14 is a smaller molecule, as we talked about yesterday.
15 Q. Can you go over, then, to page four of this
16 document, doctor.
17 A. Okay.
18 Q. Before you do that, I'd like to direct your
19 attention back just to the bottom of that page. Mr.
20 Creighton reports here "The important feature of
21 Figure 2," which is one of the figures in this
22 document, "is that relatively small changes in pH
23 between 6 and 8 have a very large effect on the
24 proportion of free base nicotine in the smoke." Is
25 that what you were referring to yesterday?

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1 A. That's correct. And I think I was on the wrong
2 page when I said what I just a minute ago. The free
3 base nicotine and non-extractable nicotine that's on
4 this page explain the terms. Free base nicotine and
5 extractable nicotine or unbound nicotine they say
6 here are equivalent, so you'll see them used
7 interchangeably. And non-extractable nicotine is the
8 salt form or the bound form of nicotine, and so
9 that's the one that's less available as far as
10 transfer across the physiological membrane.
11 Q. And if we then go on to the next page, that's
12 the reference that --
13 A. That's correct.
14 Q. And I apologize --
15 A. I'm sorry.
16 Q. -- for not getting you the right page.
17 A. Yeah.
18 Q. The next page is the "Effects of Free Base and
19 Bound Nicotine on the Sensory Properties of Smoke,"
20 and there it's reported that free base nicotine is
21 the most chemically and physically -- physiologically
22 active form because it is most readily absorbed; is
23 that correct?
24 A. That's correct. Most rapidly absorbed.

25 Q. And if you could direct your attention down to
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1 the pH range of the general approximation that's in
2 this document of U.S. blended cigarette smoke, is it
3 depicted there the range that you get by small
4 changes in pH? If we could just use the U.S. blended
5 cigarette smoke.

6 A. Yes, the one in the middle, and it shows a pH
7 range of 5.2 to 6.2, and then it shows you out to the
8 right of that percentage that you might expect in a
9 solution like that to be free base nicotine. And
10 this really shows the logarithmic effect of pH. So
11 with a change of one unit, from 5.2 to 6.2, there's a
12 ten-fold increase in the amount of free base nicotine
13 or the percentage of free base nicotine going from
14 .22 to 2.20.

15 Q. Doctor, could you turn, then, to the chart of
16 the chemical structure of nicotine, which is at Bates
17 number, last three pages, 420.

18 A. Okay.

19 Q. And we have three different chemical equations
20 there, one is the diprotonated, monoprotonated, and
21 then unprotonated. Can you describe what is being
22 depicted here?

23 A. Well when you talk about protons, you're talking
24 about hydrogen ions, so in the top drawing at the
25 bottom of the first N, which is a nitrogen, is an H

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1 with a little plus beside it, so that represents a
2 proton. And there's also next to the -- the
3 H -- CH₃, there's another H there. So there's two
4 hydrogen ions, and that's what it means,
5 diprotonated. Two is di, protonated means hydrogen
6 ions. And so this is the bound type of nicotine or
7 the non-extractable type of nicotine.

8 If you lose one of those hydrogen ions, then it
9 becomes monoprotonated, one proton, and that's kind
10 of an intermediate form. And then the one at the
11 bottom is the one where there's no hydrogen ions
12 present, and that is the unprotonated or the free
13 base form of nicotine, and they also term it
14 extractable form. There's an extraction process at
15 one point that they use where they would extract
16 nicotine with various solvents, and that's -- that's
17 how they did the procedure. But basically, the salt
18 form or the bound form and the free base form are the
19 two that are the -- kind of each ends of the
20 spectrum.

21 Q. And could you turn back one page, then, to 419,
22 which is entitled Figure 2, "DISTRIBUTION OF BOUND
23 AND FREE BASE NICOTINE FORMS AT VARIOUS pH LEVELS."
24 And what's being depicted there, sir?

25 A. This is --

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1 Q. This is a busy graph.
2 A. Yeah.
3 Q. But could you describe it.
4 A. I don't have my pointer with me. The -- the --
5 graph shows the -- the three different forms of
6 nicotine, it shows the diprotonated, the
7 monoprotated and the unprotonated forms, and the
8 they're basically in equilibrium, depending upon what
9 the pH is. So if you move the pH one direction, then
10 there will be more of one form than the other. So at
11 a pH of eight, which is the dissociation constant for
12 nicotine, it's called the PKA, at a pH of eight, half
13 of it will be in the bound form and half of it will
14 be in the free form. And if the pH is less than
15 that, again with the logarithmic curve, it will be
16 lots less depending upon what the pH is.

17 So if you look at the bottom of this, if you
18 could make that a little bit -- come in closer and
19 just go to the bottom where it shows the pH of
20 solution? Yeah. That's -- that's better. So the pH
21 of solution at the bottom where you see the number
22 six, just to the left of that is where the
23 diprotonated curve kind of ends, but then as you get
24 on to the next part of the curve, then the solid line
25 begins to go up very dramatically, depending upon

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1 what the pH is. And that's why I'm talking -- when
2 you talk about the curve being exponential, it kind
3 of just almost goes straight up as the pH goes
4 higher. So that represents the free base nicotine.
5 Q. Now cigar smoke is at about eight pH we saw from
6 the documents?

7 A. That's the rough -- the rough estimate. It
8 probably can vary. But eight is what they use in the
9 documents that we've seen.

10 Q. Okay. Now at a pH of eight, is nicotine
11 absorbed in the mouth --

12 A. Oh, free base nicotine --

13 Q. -- with cigars?

14 A. -- will go across any biological membrane,
15 that's -- that's how it gets into the system. And
16 that's the --

17 Cigar smoke doesn't have to be inhaled in order
18 to get a lot of nicotine into the system. If you
19 puff on a cigar, there is a very large amount of free
20 base nicotine, as indicated here, so if you puff it
21 in your mouth, hold it in your mouth, you can get
22 very large quantities of nicotine, just the same --

23 Same thing is true with smokeless tobacco. The
24 higher the pH of smokeless tobacco, the more free
25 base nicotine is contained in the -- the smokeless

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1 tobacco, and therefore the more absorption that
2 occurs across that biological membrane, which happens
3 to be in the mouth.

4 The other would be pipe smoke. Pipe smoke also
5 has a higher pH. And some of the highest cotinine

6 levels that we see sometimes are in people that use
7 those other products. So there are other ways of
8 getting nicotine into the system, but cigarettes just
9 happen to be the most efficient delivery system to
10 get that very high spike that we talked about
11 yesterday.

12 Q. Now the cigar smokes have the higher pH; is that
13 what you're talking about?

14 A. That's correct.

15 Q. Okay. And you said the cotinine level. What
16 was that again?

17 A. Well cotinine is the metabolic product of
18 nicotine. When nicotine is ingested in any form, it
19 goes into the body system and it goes around,
20 eventually gets metabolized by the liver. And
21 cotinine is one of the metabolic products of nicotine
22 that we can measure in the bloodstream. And it has a
23 longer half-life than nicotine. Nicotine has a very
24 short half-life, around 120 minutes.

25 And what "half-life" means is that if you had a

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1 solution -- a chemical in your bloodstream like
2 nicotine, and let's just give it a number, say the
3 number was 20, 20 nanograms per ml, if it has a
4 half-life of 120 minutes, then in 120 minutes the
5 amount left in your body would be half of that, it
6 would be ten; and then another 120 minutes later, it
7 would be five; and 120 minutes later, it would be two
8 and a half. And so that's what a half-life is.

9 Cotinine has a longer half-life, it has a
10 half-life of 18 to 20 hours, so it's much easier to
11 measure. And it gives us an idea of what the total
12 exposure of a person has been to nicotine over a
13 longer period of time. It's just a measure we use.
14 Like we want to use it to measure how much nicotine
15 patch therapy to give a patient, we would measure
16 their cotinine level, which would give us an
17 indication of how much nicotine they've been taking
18 in. And we might use two patches instead of one with
19 people with very high cotinine levels.

20 Q. Okay. Now doctor, based on your review of the
21 defendants' documents, do you have a opinion to a
22 reasonable degree of scientific certainty whether the
23 defendants were aware that free base nicotine is the
24 most chemically and physiologically active form of
25 nicotine because it is most rapidly absorbed into the

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1 blood system?

2 A. They absolutely were.

3 Q. And doctor, based on your training and expertise
4 and experience, do you have a opinion to a reasonable
5 degree of scientific certainty whether nicotine is
6 addictive?

7 A. Absolutely it is.

8 Q. And when we speak about addictive, is it
9 addictive to all people?

10 A. Oh gosh, no, no. There is a range of -- of this

11 as far as people who can use and not become
12 dependent, just like there is a range of people who
13 can use heroin and not become dependent. There is
14 lot of reports in -- in the literature about that
15 type of exposure. Even from Viet Nam, people who may
16 have had used heroin very regularly, but then when
17 they got back to the United they weren't dependent
18 upon it. So even with a drug hike heroin, not
19 everyone becomes dependent upon it. And the same
20 thing is true of nicotine.

21 Q. And did the defendants' documents indicate they
22 were aware of that?

23 A. Aware of its addictive potential?

24 Q. Yes.

25 A. Yes, they were.

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1 Q. Were they aware that there was a range of
2 tolerance with respect to nicotine?

3 A. Yes.

4 Q. Prior to the filing of this lawsuit in August of
5 1994, did any of the defendants ever publicly admit
6 that nicotine was addictive?

7 A. Not to my knowledge.

8 MR. BERNICK: Objection, Your Honor, lack
9 of foundation.

10 THE COURT: You may answer that.

11 A. Not to my knowledge, no.

12 Q. Okay. Now you used the term "addiction" and
13 "dependence." Is there a difference?

14 A. No. We use those terms interchangeably in the
15 field. They are basically synonymous. We've got a
16 lot of discussion over the years of what -- which one
17 to call this. Even when we named our Nicotine
18 Dependence Center we had a lot of discussion within
19 our staff whether or not to call it the Nicotine
20 Addiction Center or the Nicotine Dependence Center,
21 and we discussed it and decided to call it the
22 Nicotine Dependence Center for a lot of different
23 reasons. The Surgeon General's report of 1988 is
24 called -- or is named "The Surgeon General's Report
25 on Nicotine Addiction," and they had the same public

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1 discussions there. And others have had those kind of
2 discussions as well.

3 But basically "dependence" and "addiction" are
4 synonymous terms, and we use them in that way.

5 Q. Okay.

6 A. They're interchangeable.

7 MR. CIRESI: Your Honor, at this time I'd
8 like to play a proceedings -- an excerpt from the
9 proceedings before the House Subcommittee on Health
10 and Environment of the House Committee on Energy and
11 Commerce, Henry A. Waxman, Chairman, dated April
12 14th, 1994, which is the testimony of the CEOs of the
13 defendants on the issue of nicotine before Congress.

14 MR. BERNICK: Object, Your Honor. I'm
15 going to object. I believe that that congressional

16 proceeding is not properly admissible into evidence,
17 certainly not excerpts from it. And I don't believe
18 that that was disclosed as part of the expert
19 materials that this witness relied upon in connection
20 with the expert discovery in this case.

21 MR. CIRESI: It was so disclosed. It's on
22 the exhibit list.

23 THE COURT: Excuse me, counsel. Was it
24 disclosed or was it not?

25 MR. BERNICK: In the materials that were
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1 listed for his testimony it was disclosed, but in
2 connection with the expert process; that is, the
3 identification of those materials upon which he would
4 rely as an expert, it was not in fact disclosed. And
5 that is the basis for our objection.

6 MR. CIRESI: Could I address that now?

7 THE COURT: Please.

8 MR. CIRESI: Okay. As the defendants have
9 stated with regard to their experts, they said these
10 are illustrative. Neither side was required in the
11 expert reports to list every single document that the
12 experts would be relying on to form the basis of
13 their opinions. What they were required to do was to
14 set forth the opinions that they would be testifying
15 to. That's the notice that the parties needed to
16 have and were given.

17 THE COURT: All right. Proceed, counsel.

18 MR. BERNICK: Your Honor --

19 THE COURT: Proceed, counsel.

20 MR. BERNICK: All right.

21 (Video excerpt played.)

22 BY MR. CIRESI:

23 Q. Doctor, is there a standard used in the medical
24 community for defining substance dependence or
25 addiction?

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1 A. There is.

2 Q. And what is that, sir?

3 A. What's called the DSM IV criteria, which is the
4 Diagnostic and Statistical Manual, the fourth one,
5 from the American Psychiatric Association.

6 MR. CIRESI: And Your Honor, we would offer
7 Exhibit GK000298, which is the American Psychiatric
8 Association's Diagnostic and Statistical Manual No.
9 IV, and we'd offer it pursuant to 803(18), a learned
10 medical treatise.

11 MR. BERNICK: I have no objection to that.

12 THE COURT: It will be received into
13 evidence.

14 BY MR. CIRESI:

15 Q. And doctor, can you turn in the second volume of
16 your book to Exhibit 30219 --

17 MR. CIRESI: Which, Your Honor, we're going
18 to offer for illustrative purposes. It is part of --
19 it is the criteria for dependence or addiction from
20 Exhibit GK000298. We're offering it for illustrative

21 purposes.
22 MR. BERNICK: I'm sorry, the number again
23 was that?
24 MR. CIRESI: 30219.
25 MR. BERNICK: No objection, Your Honor.
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1 THE COURT: Court will receive 30219.
2 BY MR. CIRESI:
3 Q. Doctor, can you first of all explain the title,
4 it says "Criteria for Substance Dependence." Does
5 that also include addiction in that term?
6 A. Correct. And again we use the term "dependence"
7 and -- and "addiction" synonymously. And this is the
8 criteria for all substance dependence, "substance"
9 meaning a drug and "dependence" meaning the addictive
10 or the dependence process. So in order to be
11 classified as a drug of dependence, it would have to
12 have, as it says in the beginning of this, a pattern
13 of substance abuse manifested by three or more of the
14 following occurring at any time in the same 12-month
15 period. So this is a -- a way of defining for us and
16 for our -- our profession how to judge when a person
17 would be classified as being dependent on a
18 substance.
19 Q. Now you say it has to have a substance. What's
20 the significance of that?
21 A. Well, a substance is like a drug -- or is a drug
22 as opposed to other compulsive behaviors. There are
23 a lot of compulsive behaviors, and smoking is a
24 compulsive behavior too, but it has also a substance
25 or drug present as well. There are compulsive
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1 behaviors, like compulsive gambling and other types
2 of compulsive behaviors. The thing that sets this
3 aside is the drug is central to the issue or the
4 substance is central to the issue, and that's what we
5 talk about when we talk about substance dependence.
6 Q. One of the defense counsel mentioned in their
7 opening statement, I think, something to the effect
8 that water or TV could be addictive. Is that
9 possible?
10 MR. BERNICK: Mischaracterization of what
11 was said. I object, Your Honor.
12 THE COURT: Okay. The jury will recall
13 what the opening statement said.
14 Q. Is water addictive?
15 A. No.
16 Q. Is TV addictive?
17 A. No.
18 Q. Does that make any sense to you as a medical
19 doctor?
20 A. No.
21 Q. Can we then direct our attention to tolerance.
22 Can you describe that criteria.
23 A. Tolerance is the phenomenon that we see with --
24 with drugs of dependence where, when you are exposed
25 to it initially, then you may have an effect, that if

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1 you're exposed to it more and more and more, that
2 effect goes away.

3 You recall the first experience a person may
4 have had with smoking a cigarette, like myself, the
5 first cigarette I ever had, I felt like I was turning
6 green, I got nauseated, I got lightheaded and I
7 didn't feel very well. And in fact somebody will get
8 sick to their stomach if they take -- if they smoke
9 too much at their first experience. And the way that
10 a person overcomes that or gets accustomed to that is
11 to smoke more. And the more you smoke, the more
12 tolerance there is to those adverse effects like
13 nausea or lightheadedness.

14 So the phenomenon begins to build up in the
15 central nervous system, that's where it's mediated,
16 so that a person can smoke large numbers of
17 cigarettes over a period of time and not have
18 those -- those adverse effects.

19 The tolerance phenomenon in this one, in
20 nicotine dependence, is a little different than some
21 of the tolerance phenomenon to other drugs. Some of
22 the other drugs take a lot longer to develop a
23 tolerance, and therefore when they stop using the
24 substance, like alcohol or opiates, it takes a long
25 time for that tolerance to go away.

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1 With nicotine, the tolerance can develop fairly
2 rapidly, and then when a person stops smoking, the
3 tolerance can go away. We watch the patients who
4 will experience that. For example, they may stop
5 smoking for a month or six weeks and then start
6 again, and they'll experience the same thing all over
7 again; they'll get nauseated, lightheaded with their
8 first cigarette again. So it's a phenomenon we
9 observe. And tolerance is a biochemically mediated
10 experience within the central nervous system.

11 Q. The next criteria is withdrawal. Can you
12 describe that?

13 A. Withdrawal symptoms are what happens when a
14 person has a blood level of the substance to go down
15 or to go away completely, and it can happen either
16 way. We often have patients who will awaken in the
17 middle of the night to smoke a cigarette because they
18 had withdrawal symptoms during the night that would
19 awaken them because their nicotine levels have gone
20 down. So it doesn't have to be totally abstinence
21 from the substance in order to have withdrawal
22 symptoms. Withdrawal symptoms can occur just with a
23 decrease in the nicotine levels in the bloodstream.

24 And remember that the nicotine half-life is very
25 short, and that's one reason that the dosing of

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1 nicotine in cigarettes has to be so frequent is

2 because the half-life is only 120 minutes. So when
3 you smoke a cigarette, then 120 minutes later the
4 amount of nicotine that was in your bloodstream has
5 been reduced at least by half, if not more, and so
6 that's why repeated smoking throughout the day is
7 required in order to keep the nicotine levels up.

8 So withdrawal symptoms can occur either with a
9 decrease in the nicotine level or it can occur when
10 the nicotine level goes down completely. Withdrawal
11 symptoms are very well described as being anxiety,
12 irritability, frustration. I think I described my
13 own experience when I stopped smoking. My co-workers
14 wanted me to start smoking again because I was so
15 irritable and so crabby and I wasn't able to
16 concentrate on what I was doing. Inability to
17 concentrate is one of the other withdrawal symptoms
18 that occurs.

19 People can become depressed. Depression is one
20 of the symptoms that we know occurs in people who
21 stop smoking. I think I described yesterday people
22 who have had to be admitted to the hospital because
23 of severe depression. Probably the -- the most
24 profound evidence of withdrawal I've ever seen is a
25 woman that we had in our inpatient treatment program.

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1 And we were making rounds on the second day after she
2 had been admitted, and at the time she was admitted
3 her cotinine level was in around the 1100 range or
4 so. She still kind of holds the indoor record. And
5 the cotinine level of 1100 would be the equivalent of
6 smoking four to five packs of cigarettes in a day,
7 and that's what she had been smoking. And her -- her
8 ability to concentrate and to really be in touch with
9 all of us was so impaired that when I walked in the
10 room she was looking at her watch and poking on it,
11 and she said that -- that this is really hard to dial
12 the telephone. And -- and she really was very
13 confused and in the midst of the most severe
14 withdrawal I've ever seen.

15 So withdrawal symptoms can be mild, they can be
16 not -- they can be absent, some people do not have
17 severe withdrawal symptoms at all, they can be
18 moderate or they can be severe, depending upon how
19 much exposure the person has had over what period of
20 time.

21 Q. Now the third criteria for addiction or
22 dependence, "Substance taken in larger amounts or
23 longer than intended." Can you describe what that
24 entails?

25 A. Well the "than intended" is kind of the key part

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1 to this, because it really has to do with control.
2 Patients very often -- my --

3 My own example, I would get up in the morning, a
4 lot of the mornings, and I'd say well I'm not going
5 to smoke as much today as I did yesterday. I smoked
6 two to three packs a day when I smoked, and so you

7 had to work really hard to get that many cigarettes
8 in. And there were many days that I would say well
9 I'm not going to do that all over again, but then
10 about the second hour of the day, the control
11 mechanism, which had been lost a long time ago for
12 me, would have -- would take over and the drug itself
13 would take over and I would smoke the same number of
14 cigarettes all over that day, even though I had
15 consciously decided not to do that. I just didn't
16 have the control over the substance.

17 And that's -- that is the -- one of the central
18 issues here, is loss of control. I had lost my
19 choice. I didn't have a choice any more in this
20 matter because the drug was interfering with my
21 choice.

22 Q. The next criteria is "Persistent desire or
23 unsuccessful efforts to cut down or control substance
24 use."

25 A. It's kind of similar to the -- to the third
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1 criteria, and that is the desire to control the use.
2 And -- and when you have -- when you're dealing with
3 a substance of dependence in a person who is becoming
4 or has become dependent, the control is -- is no
5 longer there because the drug is exercising control.

6 Now that doesn't mean that somebody can't cut
7 down or -- or -- or -- or reduce their intake for
8 periods of time. The patients we see have a lot of
9 difficulty with this because they can reach down to a
10 certain level of smoking, around ten cigarettes a
11 day, and when they try to go below that they have a
12 lot of difficulty as far as withdrawal symptoms are
13 concerned. They can smoke hard enough on ten
14 cigarettes a day to usually get enough nicotine into
15 their system that they can get through the day
16 without too severe of withdrawal symptoms. And below
17 that kind of threshold for those individuals, they
18 will have withdrawal symptoms.

19 So when -- when we help people to stop smoking,
20 there has been a lot of theory in the past, maybe --
21 maybe people can just cut down and fade down in their
22 use and cut down one or two more a day until they get
23 down to zero. Well they hit that barrier around ten
24 or so cigarettes a day and they can't go below that,
25 and usually will then relapse to smoking at higher

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1 levels. It's one of those things that really has to
2 do with control. And people will tell you that they
3 have tried many, many times to stop smoking. I
4 stopped smoking dozens of times, sometimes for as
5 long as only 30 minutes, because then the desire to
6 smoke would come back and it would be overpowering.

7 Q. Can we move then to the next criteria, doctor,
8 which is "Great deal of time spent in activities
9 necessary to obtain or use the substance, or recover
10 from its effects."

11 A. Well this isn't quite a big a deal as it used to

12 be as far as cigarettes are concerned. When I was
13 growing up and when I was in college -- I didn't
14 start smoking until I was in college. I played
15 basketball and -- and didn't start -- start smoking
16 until I was in college after I'd stopped playing
17 basketball. But at that time in -- in our history,
18 if you will, there weren't convenience stores so you
19 could go at any hour of the day or night to go buy
20 cigarettes or anything else. So after I had been
21 smoking for about a year, I was a heavy smoker not at
22 the very beginning, but within six months I was a
23 very heavy smoker, and within a couple of years I was
24 an extremely heavy smoker, two to three packs a day,
25 and I spent an enormous amount of time making sure

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1 that I never ran out of anything.

2 I would start the day with two packs of
3 cigarettes, two fresh packs, unopened packs. I had a
4 Zippo lighter with me at all times, I had a Ronson
5 lighter fluid in the glove compartment, Ronson
6 lighter fluid in the medicine cabinet, and though
7 it's not as much a big deal today as far as spending
8 time making sure the supply is there, most people who
9 are dependent will make sure that they don't run out,
10 because when you run out, then the symptoms can be
11 very severe.

12 Q. The next criteria is "Important activities given
13 up or reduced because of substance abuse." Can you
14 describe that?

15 A. Well it is a very important part of what I do
16 from a medical standpoint in the patients that I see
17 because they often will give up things and not do
18 things because of their smoking.

19 As time has gone into the 1980s and 1990s, as
20 smoking policies have become more restrictive, we've
21 had people who retire from jobs because of smoke
22 restrictions at work. I've not known of anyone to be
23 fired from our place, but there have been people who
24 have retired that are giving up important things
25 because the substance is more important than that.

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1 I'll never forget a woman that I had that became
2 very depressed, and I inquired of her why are you
3 depressed? And as we went through the
4 history-gathering process, it became apparent that
5 she'd become depressed because of her
6 daughter-in-law. And her daughter-in-law had made a
7 little rule in her house that there was no more
8 smoking, and the daughter-in-law and son -- and son
9 had a baby, and this woman became depressed because
10 she couldn't any longer go see the grandchild. And
11 the reason she couldn't go see the grandchild was
12 because the daughter-in-law had put a rule in the
13 house that she couldn't smoke in the house. And she
14 became depressed and we had to deal with that, and it
15 was not because of anything except her dependence on
16 nicotine.

17 So people very frequently will give up important
18 things to them, even to the point of giving up
19 relationships, because of their dependence on this
20 substance.

21 Q. And the last criteria then, doctor, is
22 "Continued substance use despite knowledge of a
23 physical or psychological problem likely caused or
24 exacerbated by the substance. Can you describe that?

25 A. Well as -- as an internist, I probably see this

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1 one most often. Excuse me. I take care of parents
2 and I've taken care of patients all of -- all of my
3 career, and this is probably the one that is the most
4 difficult to deal with because these patients that we
5 see have serious medical problems but continue to use
6 this substance, nicotine delivered via cigarettes.
7 And as I said earlier, the cigarette is the most
8 efficient delivery device of nicotine that exists; it
9 is the best way to get the nicotine to the central
10 nervous system. Unfortunately, it carries along with
11 it four thousand other compounds and chemicals as
12 were described earlier of which 43 are known
13 carcinogens, and so the effect that that has on the
14 human body is devastating.

15 So this one is the one that -- that physicians
16 see the most often. We see people with emphysema, we
17 see people with peripheral vascular disease,
18 hardening of the arteries leading to their legs, we
19 see people with coronary artery disease, we see
20 people dying of coronary artery disease.

21 They just reported in the news like -- like even
22 today, Dave Moore died of coronary artery disease,
23 but he really died of nicotine dependence because he
24 was a smoker. So we see this all the time, and it's
25 the highest level criteria that we use for the

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1 measurement of a dependence-producing product.

2 The best example I think I can give you of this,
3 and he -- and he really gives examples of all of
4 this, was a man that I took care of until he died
5 last year, and he was a recovering alcoholic. In
6 fact when I first saw him as a fellow, when I was in
7 training in 1975, I got him into a treatment for his
8 alcoholism. He continued to smoke during the all the
9 time from 1975 through the summer of 1997, and he had
10 every complication that you can imagine; he had
11 emphysema, he had coronary artery disease, had bypass
12 procedure, he had peripheral vascular disease, had to
13 have two procedures on his legs in order to get
14 circulation working again into his legs, he had a
15 perforated peptic ulcer, and -- and he still did not
16 get the relationship between his smoking and his
17 diseases. And even though I confronted him with that
18 and said, "Frank, you know, what do you think about
19 all these diseases that you've had that are related
20 to your smoking?" And his response was, "You know,
21 doctor, I just don't see how my cigarettes have

22 caused all of this."
23 So denial and rationalization feed into this
24 one, which is the last one, and we see it every day
25 in our medical practice.

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1 THE COURT: Counsel, I think we'll recess
2 for lunch at this time and reconvene at 1:40.

3 THE CLERK: Court stands in recess.
4 (Recess taken.)
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1 AFTERNOON SESSION.

2 THE CLERK: All rise. Court is again in
3 session.

4 (Jury enters the courtroom.)

5 THE CLERK: Please be seated.

6 MR. CIRESI: Thank you, Your Honor.

7 BY MR. CIRESI:

8 Q. Good afternoon, doctor.

9 A. Good afternoon.

10 Q. In 1988, did the Surgeon General of the United
11 States issue a report on "The Health Consequences Of
12 Smoking, NICOTINE ADDICTION?"

13 A. That's correct.

14 Q. Could you turn, doctor, please, to Exhibit 3820.
15 Again in volume one.

16 MR. CIRESI: Your Honor, we would offer
17 Exhibit 3820, report of the Surgeon General, 1988,
18 under 8038), public records and reports.

19 MR. BERNICK: No objection.

20 THE COURT: The court will receive 3820.

21 BY MR. CIRESI:

22 Q. Doctor, can you direct your attention, please,
23 to 3820. First of all, we have the title page on the
24 overhead, and specifically to page nine, which has
25 the "Major Conclusions," and please tell the ladies

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1 and gentlemen of the jury the major conclusions of
2 the Surgeon General's report of 1988 were.

3 A. That "Cigarettes and other forms of tobacco are
4 addicting.

5 "Nicotine is the drug in tobacco that causes
6 addiction.

7 "The pharmacologic and behavioral process --
8 processes that determine tobacco addiction are
9 similar to those that determine addiction to drugs
10 such as heroin and cocaine."

11 Those were the major conclusions from the '88
12 Surgeon General's report, which, by the way, is about
13 that thick, six hundred or so pages.

14 Q. Now doctor, when -- based on your experience,
15 when people start smoking, are they aware of the
16 addictive nature of nicotine in the cigarettes?

17 A. No. Most people who start smoking start smoking
18 before the age of 18. In fact more -- most people
19 start smoking before the age of 16. I was an unusual
20 person in that respect because I didn't start until
21 later, but I still started smoking at age 18 or 19.

22 So most people start smoking when they're
23 teen-agers, and teen-agers are children, do not
24 really recognize or even think about nicotine as
25 being an addicting substance.

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1 Q. And from your review of the defendants'
2 documents, were they aware, based on your -- on this
3 review, that most people who started smoking were not
4 aware of the addictive nature of nicotine?

5 A. That's correct, they were.

6 Q. Can you direct your attention, first, to Exhibit
7 12408.

8 A. Okay.

9 Q. And this is a document that's already in
10 evidence. Please put the title page up on the --

11 It's Mr. Teague's April 14th, 1972 research
12 planning memorandum on the nature of the tobacco
13 business on the crucial role of nicotine therein.
14 Would you please direct your attention to page 1
15 four --

16 A. Okay.

17 Q. -- of that report, that confidential report.

18 A. Okay.

19 Q. And I'd like to specifically direct your
20 attention to what is the first full paragraph
21 starting with the word "Before proceeding..." and
22 I'd like to -- to read that and then ask you some
23 questions about it.

24 "Before proceeding too far in the direction of
25 design of dosage forms of nicotine, it may well be --

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1 it may be well to consider another aspect of our
2 business; that is, the factors which induce a

3 pre-smoker or non-smoker to become a habituated
4 smoker. Paradoxically, the things which keep a
5 confirmed smoker habituated and 'satisfied', i.e.,
6 nicotine and secondary physical and manipulative
7 gratifications, are unknown and/or largely unexplained
8 to the non-smoker. He does not start smoking to
9 obtain undefined physiological gratifications or
10 reliefs, and certainly he does not start to smoke to
11 satisfy a non-existent craving for nicotine. Rather,
12 he appears to smoke for purely psychological
13 reasons -- to emulate a valued image, to conform, to
14 experiment, to defy, to be daring, to have something
15 to do with his hands, and the like. Only after
16 experiencing smoking for some period of time do the
17 physiological 'satisfactions' and habituation become
18 apparent and needed. Indeed, the first smoking
19 experiences are often unpleasant until a tolerance
20 for nicotine has been developed."

21 Now first of all, the tolerance that's mentioned
22 there, is that one of the criteria of addiction or
23 dependence?

24 A. That's correct. We went over that before the
25 lunch hour. In this situation it's tolerance to

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1 those adverse side effects of nausea,
2 light-headedness and so on, and the tolerance
3 develops fairly quickly, and goes away fairly quickly
4 if a person stops smoking.

5 Q. In 1972, what Mr. Teague was defining with
6 regard to pre-smokers or non-smokers, is that
7 consistent with what you've learned in your clinical
8 experience?

9 A. That's correct, that they really may start
10 smoking for all of these reasons, the image,
11 non-conformity, defying, and all of those things
12 listed here, but once hooked, then the nicotine is
13 the driving force.

14 And it's interesting that up above, when he
15 talks about that a person doesn't start smoking to
16 satisfy a non-existent craving for nicotine,
17 "craving" is a word that we use when we talk about
18 cocaine. Cocaine craving, nicotine craving are
19 synonymous in many respects because the craving can
20 be very powerful.

21 So people don't start smoking to avoid
22 withdrawal symptoms because they haven't experienced
23 them yet.

24 Q. Is it inconsistent to say that nicotine is
25 addictive and at the same time to say that people can

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1 stop smoking?

2 A. Oh. Oh, gosh, no. People who are dependent on
3 drugs, alcohol, other drugs, can stop -- stop using
4 those drugs. That's not inconsistent at all. Just
5 because a person can stop using a substance, and stop
6 smoking, does not reclassify it into a non-addicting
7 substance, no.

8 Q. Can you direct your attention, then, to page
9 five of this report.
10 A. Okay.
11 Q. In the middle of the first full paragraph,
12 starting with the word "If" there's the following,
13 "On the other hand, if we are to attract non-smoker
14 or pre-smoker, there is nothing in this type of
15 product that he would currently understand or desire.
16 We have deliberately played down the role of
17 nicotine, hence the non-smoker has little or no
18 knowledge of what satisfactions it may offer him, and
19 no desire to try it. Instead, we somehow must
20 convince him with wholly irrational reasons that he
21 should try smoking, in the hope that he will for
22 himself then discover the real 'satisfactions'
23 obtainable."
24 Is that consistent with what you've learned from
25 your clinical experience, doctor?

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1 A. It is. And it's always curious in these
2 documents when they put things in quotation marks,
3 this -- this has "satisfactions" in quotation marks
4 right in the middle of it, and I think that what's
5 being referred to is the effect of the drug, and --
6 and that's really what -- what this person is saying
7 because that is the effect that they're looking for.
8 That's when people start smoking and then they begin
9 to have the experience of the effect of the drug,
10 that's -- that's how -- that's how it occurs.
11 Q. And doctor, can you then turn your attention to
12 Exhibit 13677, which would be in the second book.
13 A. Okay.
14 Q. This is a Brown & Williamson document dated
15 August 24th, 1978, from the brand manager, H. D.
16 Steele, to Mr. M. J. McCue, a brand manager.
17 Have you reviewed this document, sir?
18 A. I have.
19 Q. Is this one of the documents that you've used to
20 form the basis of your opinion?
21 A. It is.
22 Q. Is it consistent with other documents that
23 you've seen of the defendants in their files?
24 A. Yes, very consistent.

25 MR. CIRESI: Your Honor, we would offer
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1 Exhibit 13677.
2 MR. BERNICK: No objection, Your Honor.
3 THE COURT: Court will receive 13677.
4 BY MR. CIRESI:
5 Q. At the top it's marked "BROWN & WILLIAMSON,
6 PROTECTED BY MINNESOTA PROTECTIVE ORDER." The
7 subject of this is "Future Customer Reaction to
8 Nicotine."
9 Now in this memorandum does Mr. Steele point out
10 that Brown & Williamson was aware that few customers
11 were aware of the effects of nicotine?
12 A. Yes, he does, in the beginning of the second

13 paragraph.
14 Q. Let me read that. "Very few customers are aware
15 of the effects of nicotine, i.e., its addictive
16 nature and that nicotine is a poison. Most smokers
17 view nicotine as the number that follows the 'tar'
18 figure on cigarette packs. Hardly any consumers use
19 nicotine numbers as a basis for their purchase.
20 Tests have been conducted to determine the effect of
21 including nicotine numbers in the advertising
22 message, and in every case there were adverse
23 reactions to the ads."

24 Now this knowledge on the part of Brown &
25 Williamson from its studies, is that consistent with
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1 what you found in your clinical experience?
2 A. I think that's not only correct, it's really
3 stated very well. Very few consumers, very few
4 smokers are aware of the effects of nicotine until
5 they get into it. And -- and the early consumers,
6 the starters in their words, which are basically our
7 children, do not know this. They -- they don't
8 realize that it's a toxin or a poison as well as an
9 addictive substance.

10 Q. And in your review of the documents, did you
11 ascertain whether or not the industry was concerned
12 that if the knowledge of the addictive nature of
13 nicotine became known to the public, the industry
14 would no longer be able to defend smoking as a free
15 choice?

16 A. I have seen such documents, yes.

17 Q. Can you direct your attention to Exhibit 14403.
18 This is a --

19 A. 14303.

20 Q. 14303.

21 A. Yeah.

22 Q. This is a September 9th, 1980 Tobacco Institute
23 memorandum from Mr. Knopick, K-n-o-p-i-c-k, an
24 employee of The Tobacco Institute, to Mr. Kloepper,
25 K-l-o-e-p-f-e-r, senior vice-president of public

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1421

1 relations.

2 Have you seen this before?

3 A. I have, yes.

4 MR. CIRESI: Your Honor, we would offer
5 Exhibit 14303.

6 MR. BERNICK: No objection.

7 THE COURT: The court will receive 14303.

8 BY MR. CIRESI:

9 Q. Now doctor, this relates to Mr. Knopick's
10 reporting to Mr. Kloepper on a story that the
11 National Institute of Drug Abuse in 1980, eight years
12 before the Surgeon General's report, wanted to add
13 the word "addictive" to the cigarette warnings. Do
14 you see that?

15 A. I do, yes. It's in the first paragraph.

16 Q. By the way, that last document that we saw, the
17 Brown & Williamson one, that was in 1978, ten years

18 before the Surgeon General's report?
19 A. Yes, it was '78.
20 Q. And Mr. Teague's was in 1972, about 16 years
21 before the Surgeon General's report; is that correct?
22 A. Before the '88 Surgeon General's report, yes.
23 Q. Now in this document on page two, Mr. Knopick
24 reports to Mr. Kloepper as follows: "I feel badly
25 about my own lack of intelligence-gathering in this

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1 situation. But I don't think the questions I now
2 raise are academic. Shook, Hardy" -- which is one of
3 the defendants' law firms defending the
4 defendants -- "reminds us, I'm told, that the entire
5 matter of addiction is the most potent weapon a
6 prosecuting attorney can have in a lung
7 cancer/cigarette case. We can't defend continued
8 smoking as a 'free' choice if the person was
9 'addicted.'" Now can an addicted person make a free
10 choice, or is his or her choice impacted by the drug?

11 A. No, and -- and in -- this actually says it very
12 well. Free choice is something that -- that the
13 defendants talk a lot about, but when you talk about
14 an addiction or a dependence, it's well beyond that,
15 it's on orders of magnitude that are very, very much
16 beyond that. So the dependence process and addiction
17 process affects the ability to make free choice.

18 Q. Can you turn your attention now, doctor, to
19 Exhibit 11938, which would be in volume one.

20 A. Okay.

21 Q. This is a private and confidential matter dated
22 February 13th, 1962 of B.A.T. Company, Ltd.?

23 A. Yes.

24 Q. And have you reviewed this document?

25 A. I have.

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1 Q. And is this one of the documents that has formed
2 the basis of your opinions in this case?

3 A. It is.

4 Q. And with respect to the issues that it
5 addresses, is it consistent with other documents that
6 you've reviewed of the defendants in this matter?

7 A. Yes, it is.

8 MR. CIRESI: Your Honor, we would offer
9 Exhibit 11938.

10 MR. BERNICK: No objection, Your Honor.

11 THE COURT: Court will receive 11938.

12 BY MR. CIRESI:

13 Q. You see first of all, the first page, "PRIVATE
14 AND CONFIDENTIAL," February 13th, 1962, "THE EFFECTS
15 OF SMOKING, PROPOSAL FOR FURTHER RESEARCH CONTRACTS
16 WITH BATTELLE."

17 A. Yes.

18 Q. And if you'd turn to page five, you'll see the
19 name of Charles Ellis, who was a senior scientist at
20 BATCo.

21 A. Yes.

22 Q. If we go back to page one, we see, then, that

23 there's certain research projects which have code
24 names. Do you see that?
25 A. Yes.

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1 Q. The first one is MAD HATTER I?
2 A. Uh-huh.
3 Q. Which is a preliminary investigation of the
4 factors influencing demanding habits and literature
5 survey?
6 A. Uh-huh, yes.
7 Q. Then you go on to page two, MAD HATTER II,
8 investigation of the nicotine balance in moderate and
9 in heavy smokers, and the study of the social and
10 physiological factors in the smoking habit?
11 A. Yes.
12 Q. And then you go on to MAD HATTER III,
13 investigation of the fate of nicotine in the body,
14 experiments on animals, to be followed by experiments
15 on human beings. See that?
16 A. Yes.
17 Q. If we go on, then, to page three, the next
18 project code name is HIPPO I, to identify and
19 investigate the various physiological effects
20 resulting from the entry of nicotine into the body.
21 And by the way, let me stop right there. This
22 overview shows when these projects were started; does
23 it not?
24 A. Yes.
25 Q. Then if we go on to the next page, there's a

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1 code name ARIEL. This was a proposed project that
2 would be aimed at making the first steps toward an
3 actual smoking device as an alternative to the
4 cigarette; correct?
5 A. That's correct.
6 Q. And then finally code name HIPPO II, and this
7 would be a continuation of HIPPO I and the argument
8 for it would rest on the relevance and importance of
9 the results obtained from HIPPO I; correct?
10 A. That's what it says.
11 Q. Now if you can direct your attention to page
12 seven.
13 A. Okay.
14 Q. I'd like to direct your attention to the middle
15 of the page, basically, where it says "If the
16 absorption...." Do you see that?
17 A. Yes.
18 Q. "If the absorption of nicotine is made pleasant
19 and attractive this enhances the benefits just as in
20 the case of well prepared and well served food.
21 However, the force of the habit or the strength of
22 addiction is not such as to give any grounds for
23 complacency in the face of alternative methods of
24 stimulating the body to meet stress, and that is just
25 where the danger lies since alternative methods are

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1 becoming available. In the last few years there has
2 been a quite remarkable increase in the production of
3 tranquilizer drugs, and while most of these need a
4 doctor's prescription there is already one on free
5 sale in Switzerland. If such drugs become more
6 freely available they will compete with nicotine,
7 which was a -- which is a natural tranquilizer, and
8 will leave smoking primarily dependent on its
9 psychological effects for the maintenance of the
10 habit."

11 Now is that consistent with what you know about
12 nicotine and its effect physiologically on the body,
13 doctor?

14 A. It is. And some people have the stimulant
15 effect from nicotine, others have a very sedating or
16 a calming effect. Part of that may be just the
17 relief of withdrawal symptoms. But it's a drug that
18 actually can act in two ways, it can be a stimulant
19 on one hand or can it be a stress reliever or calmer
20 on the other hand. So it's very consistent.

21 Q. And does the author of this document go on to
22 state that BATCo needs to learn about and know all
23 things that constitute the hold of smoking?

24 A. Yes. That is, to understand addiction, the last
25 part of that sentence, which --

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1 Q. Go down to the very last paragraph there. "What
2 we need to know above all things is what constitutes
3 the hold of smoking, that is, to an understand the
4 addiction. We wish to be able to set up a reasonable
5 picture of the interplay of the various effects of
6 smoking because only by knowing in detail the
7 performance of our own product can we appreciate the
8 strength and vulnerability of our position."

9 And did you review documents during the course
10 of this litigation which showed that BATCo and other
11 of the defendants did in fact study nicotine and its
12 addictive qualities?

13 A. They did.

14 Q. Can you direct your attention to Exhibit 11899,
15 which is a Philip Morris exhibit.

16 A. Okay.

17 Q. This is a Philip Morris exhibit entitled "THE
18 CIGARETTE CONSUMER," March 20th, 1984.

19 Before I ask you about this document, the last
20 document, doctor, that was --

21 A. 1962.

22 Q. 1962, Exhibit 11938. That was 26 years before
23 the Surgeon General's report; is that correct?

24 A. The '88 Surgeon General's report on nicotine
25 addiction, yes, it was.

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1 Q. Back, then, to Exhibit 11899. It's entitled
2 "THE CIGARETTE CONSUMER," March 20th, 1984. And you
3 did review this; correct?

4 A. I did.
5 Q. And it's one of the documents that forms the
6 basis for your opinions?
7 A. It is.
8 Q. And is it consistent with other documents that
9 you've reviewed of the defendants concerning the
10 subject matters contained therein?
11 A. Very much so.
12 MR. CIRESI: Your Honor, we would offer
13 Exhibit 11899.
14 MR. BERNICK: No objection.
15 THE COURT: Court will receive 11899.
16 BY MR. CIRESI:
17 Q. Can you direct your attention --
18 Well let's first look at the first page entitled
19 "THE CIGARETTE CONSUMER," March 20th, 1984.
20 A. Okay.
21 Q. If we go to the second page it shows what the
22 report will cover, who smokes, incidence; heaviness
23 of use, consumption; brand loyalty, brand switching.
24 Can you direct your attention to page 14 of this
25 document.

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1 A. Okay.
2 Q. If we move toward the -- toward the top, do we
3 find Philip Morris doing the same type of consumer
4 research and finding the same answers as RJR and the
5 other companies' documents that we've already seen --
6 A. That's --
7 Q. -- in terms of who begins to smoke?
8 A. That is correct.
9 Q. That would be they begin smoking for peer
10 pressure, to rebel, or a certain independence, to
11 appear grown up, or to experiment; correct?
12 A. Those are some of the reasons, yes.
13 Q. And if you go to the second check right -- right
14 below that, "But, for the most part, people continue
15 to smoke because they find it too uncomfortable to
16 quit."
17 Does that relate in any way to the criteria for
18 substance dependence or an addiction?
19 A. I think it's an euphemism for withdrawal
20 symptoms.
21 Q. Okay. And the next check point is "Over 85
22 percent of smokers agree strongly/very strongly to "I
23 wish I had never began smoking." Is that consistent
24 with what you found in your clinical experience?
25 A. Absolutely.

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1 Q. The next check point is "Over 80 percent claim
2 to have attempted to quit, approximately 40 percent
3 to have quit for more than a week, 22
4 percent...serious attempt in the past 18 months." Is
5 that what you find in your clinical experience?
6 A. It actually may be an underestimate, but it
7 certainly -- actually in our experience I think more
8 people would say these answers in this day and time.

9 So this is probably an underestimate of what is
10 reality right now. More people would say that they
11 have attempted to stop.
12 Q. Doctor, can you turn, then, to Exhibit 13344.
13 A. Okay.
14 Q. This is a Brown & Williamson document, protected
15 by the Minnesota litigation protective order,
16 entitled "CONFIDENTIAL" and "LIMITED," dated March
17 25th, 1983, subject, "PROJECT RECOMMENDATIONS."
18 Have you reviewed this document?
19 A. I have, yes.
20 Q. Is this one of the documents that forms the
21 basis of your opinions?
22 A. It is.
23 Q. Is this document and the subject matter that's
24 contained therein consistent with other documents of
25 the defendants that you have reviewed?

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1 A. It is very consistent.
2 MR. CIRESI: Your Honor, we would offer
3 Exhibit 13344.
4 MR. BERNICK: No objection, Your Honor.
5 THE COURT: Court will receive 13344.
6 BY MR. CIRESI:
7 Q. The first page is to R. A. Blott, who was senior
8 vice-president of domestic marketing, carbon copies
9 to B. L. McCafferty, who was group product director,
10 and L. R. Lewis, who was the director of
11 international brands. And we see right above
12 "INTERNAL CORRESPONDENCE" -- it may be difficult to
13 make out -- but it says "Brown & Williamson Tobacco
14 Corporation." And over to the right of that in
15 quotes is the word "LIMITED."
16 Can you direct your attention to page two of
17 that document for project recommendation, it deals
18 with the specific ideas of the project
19 recommendation, and number one is the relationship of
20 nicotine level to switching behavior.
21 "Nicotine is the addicting agent in cigarettes.
22 It, therefore, seems reasonable that when people
23 switch brands, they have a certain smoking pattern,
24 i.e., number of sticks/day, they will switch to a
25 brand at the same nicotine level.

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1 "I am currently examining all brands by nicotine
2 level and by nicotine/tar ratio levels, comparing
3 those correlations to switching patterns."
4 Now in your review of the defendants' documents,
5 did you see a number where these companies were
6 looking at tar/nicotine ratios and the addictive
7 nature of various types of cigarettes?
8 A. Yes.
9 Q. And Brown & Williamson was one of those
10 companies?
11 A. They were.
12 Q. Was one of the project implications of this
13 memorandum that they were going to increase the cocoa

14 flavor in cigarettes?
15 A. I think that's on another page. I think that
16 was on page two.
17 Q. All right. If you go to page two, this is
18 dealing with a specialty cigarette. If you look at
19 the third paragraph, "Increase the cocoa flavoring to
20 a subliminally-recognizable level. Chocolate, quote,
21 addiction, end of quote, is probably the major food
22 craving, and a cigarette reminiscent of sweet and
23 chocolate flavors could be appealing."

24 Now I'm curious, doctor. They use "addiction"
25 here in quotes, and they talk about nicotine

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1 addiction in the previous page without the quotes.

2 Is chocolate addicting?

3 A. No.

4 Q. Is there any relationship of chocolate to
5 nicotine in terms of addictive and the physiological
6 effects on the body?

7 A. Well chocolate can have physiological effects,
8 it's xanthine, but it's trivial in comparison to the
9 effects nicotine has. And furthermore, when nicotine
10 is delivered via cigarettes it causes over 400,000
11 Americans to die every year, so it's clearly very
12 different.

13 Q. Doctor, one of the criteria in substance
14 dependence -- set of criteria, was the continued use.
15 Do you recall that?

16 A. Yes.

17 Q. Okay. Is this known as rationalization and
18 denial?

19 A. Continued use despite a known -- known
20 complication to a substance of dependence, in other
21 words, developing emphysema and continuing to use,
22 requires rationalization and denial in order for the
23 person to continue to use the substance. Otherwise
24 they would -- if they were, quote, rational about it,
25 they would not do it. So you have to rationalize

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1 that, and the denial mechanism can be very, very
2 strong.

3 Q. From your review of the defendants' documents,
4 did you learn whether or not they were aware of this
5 defense mechanism of people?

6 A. Yes, they were.

7 Q. Did they capitalize on it?

8 A. Absolutely.

9 Q. How did they do that?

10 A. They did it by creating doubt, creating
11 controversy. I mean just two days ago we heard about
12 the health controversy is still a controversy.
13 There's no health controversy here. That is a --
14 a -- a euphemism used by the industry to continue to
15 stir the health controversy, as they would have you
16 to believe it. And the same thing is true with the
17 addictions controversy. This is an addictive drug
18 delivered by a device, the cigarette, that when it's

19 done that way is powerfully addicting. But it's --
20 it's -- if you continue to have doubt and
21 controversy, then a person who's already dependent on
22 the drug will rely on that sort of information to
23 allow them to continue to rationalize the use of the
24 substance.

25 The best example I can give you is when the
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1 nicotine patches came out in 1991, a year after that
2 there were some heart attacks reported in people who
3 were wearing the patch and happened to smoke at the
4 same time. And we had patients, hundreds and
5 probably thousands of patients across the country,
6 because they were dependent on nicotine, trying to
7 stop smoking, they would say, well gee, if it causes
8 heart attacks if I use this, maybe I should stop
9 using the patch as I continue to smoke. So that's a
10 good example of rationalization. They -- they were
11 concerned about the heart attack, but for the wrong
12 reasons.

13 Q. Can you turn to Exhibit 20987. It would be in
14 volume two.

15 A. Okay.

16 Q. This is a Tobacco Institute memorandum dated May
17 1st, 1972, from Fred Panzer, a vice-president for the
18 tobacco industry, to Horace Kornegay, the president
19 of The Tobacco Institute.

20 Have you reviewed this document?

21 A. I have.

22 Q. And is it one of the documents that forms a part
23 of the basis of your opinion?

24 A. It does.

25 Q. And were the subject matters that were dealt
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1 with in this document also present in other of the
2 defense documents that you reviewed?

3 A. Yes.

4 MR. CIRESI: Your Honor, we would offer
5 Exhibit 20987.

6 MR. BERNICK: No objection to the
7 introduction of the document, Your Honor. I have an
8 objection to the expertise of this witness. I don't
9 think an adequate foundation has been laid to
10 establish his expertise with regard to consumer
11 behavior and the perceptions of consumers, and we
12 also think -- we think it falls outside of the scope
13 of the expertise that has been covered by his report.

14 THE COURT: Court will receive 20987.

15 BY MR. CIRESI:

16 Q. First of all, we see the date is May 1, 1972,
17 and I want to deal with the -- first the general
18 comments. The subject of this is "The Roper
19 Proposal," proposal made by a consultant to The
20 Tobacco Institute.

21 "It is my strong belief that we now have an
22 opportunity to take the initiative in the cigarette
23 controversy, and start to turn it around.

24 "For nearly twenty years, this industry has
25 employed a single strategy to defend itself on three
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1 major fronts -- litigation, politics, and public
2 opinion.

3 "While the strategy was brilliantly conceived
4 and executed over the years helping us to win
5 important battles, it is only fair to say that it is
6 not -- nor was it intended to be -- a vehicle for
7 victory. On the contrary, it has always been a
8 holding strategy, consisting of," one, "creating
9 doubt about the health charge without actually
10 denying it."

11 Now doctor, this is 1972 and it's referring to
12 almost 20 years ago, which would be 1952. The Frank
13 Statement, which is Exhibit 30210, in 1954, and
14 specifically January 4th of 1954, made the following
15 statement: "We accept an interest in people's health
16 as a basic responsibility, paramount to every other
17 consideration in our business.

18 "We always have and always will cooperate
19 closely with those whose task it is to safeguard the
20 public health."

21 Now this statement was made right after the
22 mouse-painting experiments; correct?

23 MR. BERNICK: Your Honor, I object to the
24 form of the question. There was a recital that
25 pertained to the prior document, there was then a
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1 recital from this document and then another question,
2 so I think the question is objectionable on the
3 grounds of form.

4 We also continue to object to this line of
5 examination through this witness. We seek the
6 opportunity to conduct voir dire in order to
7 establish that it lies beyond the scope of his
8 expertise. We also think it invades the province of
9 the jury. And I understand that Your Honor ruled on
10 the document, but I'm now objecting to the line of
11 questioning.

12 THE COURT: Objection overruled.

13 MR. BERNICK: Can I have a --

14 THE COURT: Objection overruled.

15 MR. BERNICK: A request --

16 THE COURT: Please be seated, counsel.

17 BY MR. CIRESI:

18 Q. Now sir, that statement was made almost 20 years
19 before this document, 20987; correct?

20 A. Yes.

21 Q. Okay. And in this document, 20987, The Tobacco
22 Institute states that their policy was to create
23 doubt about the health charge without actually
24 denying it.

25 Now from your review of the defendants'

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1 documents in this case, did you find that that was
2 their policy?

3 A. Absolutely.

4 MR. BERNICK: Your Honor, can I have a
5 continuing objection to this line of questioning so I
6 don't have to keep on standing up and make it?

7 THE COURT: Yes, you may.

8 MR. BERNICK: Thank you.

9 BY MR. CIRESI:

10 Q. And can you turn over to the next page of this
11 document where it says "THE STRATEGIC IMPASSE."

12 A. Yes.

13 Q. "As an industry, therefore, we are committed to
14 an ill-defined middle ground which is articulated by
15 variations on the theme that, quote, the case is not
16 proved."

17 Did your review of the defendants' documents in
18 this case show that that was their theme, carried out
19 by them since 1954?

20 A. Yes.

21 Q. And finally, the second-to-the-last paragraph
22 under "THE STRATEGIC IMPASSE." "In the cigarette
23 controversy, the public -- especially those who are
24 present and potential supporters (e.g. tobacco state
25 congressmen and heavy smokers) -- must perceive,

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1 understand, and believe in evidence to sustain their
2 opinions that smoking may not be the causal factor."

3 Now, was there evidence in the documents you
4 reviewed that as early as 1958 the industry knew that
5 there was almost universal agreement that smoking
6 caused lung cancer?

7 A. Yes, there is.

8 Q. Can you turn to Exhibit 11028.

9 A. Say that again.

10 Q. 11028, which would be in volume one.

11 A. Volume one. Okay.

12 Q. This is a report on a visit to the United States
13 and Canada, April 17th to May 12th, 1958, report
14 prepared by three scientists of BATCo, Ltd., Mr.
15 Bentley, B-e-n-t-l-e-y, Mr. Felton, F-e-l-t-o-n, and
16 Mr. Reid, R-e-i-d.

17 Have you reviewed this document, sir?

18 A. I have.

19 Q. Is this one of the documents that forms a part
20 of the basis of your opinions in this case?

21 A. Yes, it is.

22 Q. Is it consistent with the other documents you
23 reviewed with regard to the subject matters that
24 you're testifying about here in court?

25 A. Yes, it is.

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1 MR. CIRESI: Your Honor, we would offer
2 Exhibit 11028.

3 MR. BERNICK: Your Honor, we have an
4 objection to this document. This document actually

5 was authored by three individuals, the lead author, I
6 believe, was at the time an employee of the Imperial
7 Tobacco Corporation.

8 THE COURT: Counsel, state -- state your
9 legal objection.

10 MR. BERNICK: Okay. We think that it is
11 hearsay and contains hearsay, Your Honor.

12 THE COURT: Counsel, can you lay more
13 foundation for this exhibit, please.

14 BY MR. CIRESI:

15 Q. Is it indicated on the bottom that it's a BATCo,
16 Ltd., Minnesota tobacco litigation?

17 A. Yes, it does.

18 MR. CIRESI: Your Honor, this is being
19 offered under 803(6), 803(16), ancient document, and
20 801(d)(2), admissions by party opponents, and 801(e),
21 admissions by co-conspirators.

22 THE COURT: Yes, counsel.

23 MR. BERNICK: It was produced by BATCo, but
24 that does not establish that it was generated in the
25 ordinary course of business by BATCo. The ancient

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1 records exception, even were it to apply, still would
2 not take care of the second layer of hearsay in that
3 it reports hearsay statements; it simply establishes
4 that the document itself is not hearsay. This has
5 hearsay within hearsay, Your Honor.

6 THE COURT: Court will receive 11028.

7 BY MR. CIRESI:

8 Q. Put the title page up, please. Thank you.

9 Title page is entitled "REPORT ON VISIT TO
10 U.S.A. AND CANADA," 17th of April to 12th May 1958,"
11 by H. R. Bentley, D. G. I. Felton, and W. W. Reid.
12 On the bottom, shows it was produced by B.A.T.
13 Company, Ltd. out of their files, in the Minnesota
14 tobacco litigation.

15 First of all, doctor, does the first page of the
16 document list the itinerary of those individuals who
17 went to the United States and Canada to seek certain
18 information?

19 A. Yes, from April the 17th through the middle of
20 May looks like.

21 Q. And I'd like to just review some of those with
22 you. First of all they visited American Tobacco
23 Company in Richmond; correct?

24 A. Correct.

25 Q. One of those individuals was Mr. H. R. Hamer or
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1 Harmer, H-a -- I believe it's Hamer, H-a-m-e-r;
2 correct?

3 A. That's what it says.

4 Q. And Dr. Harlan?

5 A. Correct.

6 Q. And Mr. Harlow?

7 A. Right.

8 Q. He also visited the Medical College of Virginia?

9 A. Yes.

10 Q. Richmond, Virginia.
11 Duke University. Liggett & Myers. And they
12 visited with Mr. Darkis, D-a-r-k-i-s, and -- I should
13 say Dr. Darkis, excuse me, and Dr. Bates at Liggett &
14 Myers; correct?

15 A. Correct.

16 Q. They also visited Richmond -- in Richmond,
17 Virginia, Philip Morris, with Mr. Seligman,
18 S-e-l-i-g-m-a-n, and Mr. O'Keefe.

19 A. Yes.

20 Q. They visited with three individuals -- or two
21 individuals in New York at The Tobacco Institute
22 Research Committee, a Mr. Hoyt and a Mr. Carl Thomson
23 from Hill & Knowlton.

24 A. Yes.

25 Q. They visited the Roswell Park Memorial Institute
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1 in Buffalo, Yale University, the Biological Research
2 Institute in Cambridge, the Roscoe Jackson Laboratory
3 in Bar Harbor, the Industry Technical Committee of
4 The Tobacco Institute Research Committee in Richmond,
5 and the individuals they met with Mr., Mr. Mr.
6 Hanmer, the chairman, Mr. Hoyt and Dr. Hockett. They
7 visited the National Cancer Institute in Bethesda,
8 Maryland. They visited Johns Hopkins Hospital in
9 Baltimore, the New York University in New York. They
10 visited the TIRC, Tobacco Institute Research
11 Committee, in New York and met with its Scientific
12 Advisory Board chairman, Clarence Cook Little and Dr.
13 Hockett. They met with individuals at the
14 Sloan-Kettering Cancer Institute in New York, and
15 they also met with the Scientific Advisory Board of
16 the TIRC in New York, and they met in Montreal with
17 Dr. Wright at the University of Toronto.

18 Now if you can turn to the second page, sir,
19 does it list there the information they were seeking?

20 A. Yes, it does.

21 Q. I'd like to direct your attention to just two of
22 those issues. Number one, first, "the extent to
23 which is it -- it is accepted that cigarette smoke
24 causes lung cancer."

25 Now again, the date of this is 1958; correct?

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1 A. Correct.

2 Q. Fourteen years before that Tobacco Institute
3 document we just looked at; am I right?

4 A. Correct.

5 Q. Direct your attention to "'CAUSATION' OF LUNG
6 CANCER" on this page one.

7 "With one exception (H.S.N. Greene)" -- I
8 believe he was from Yale University -- "the
9 individuals whom we met believed that smoking causes
10 lung cancer if by 'causation' we mean any chain of
11 events which leads finally to lung cancer and which
12 involves smoking as an indispensable link. In the
13 U.S.A. only Berkson, apparently, is now prepared to
14 doubt the statistical evidence and his reasoning is

15 nowhere thought to be sound."

16 Now I think Mr. Berkson was mentioned by one of
17 the lawyers -- or Dr. Berkson, excuse me, one of the
18 lawyers in their opening statements. He used to be
19 at the Mayo Clinic?

20 A. That's correct.

21 Q. What was his field of specialty?

22 A. He was an epidemiologist, actually probably
23 before the whole field developed. He did statistics
24 and epidemiology.

25 Q. Okay. Thank you.

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1 They then below that reference Mr. -- or Dr.
2 Greene from Yale, and they state the following about
3 Dr. Greene. This is the third paragraph: "Greene of
4 Yale still says that his repeated failure to produce
5 carcinoma by implanting lung tissue along with
6 tobacco smoke condensate into the muscles of mice is
7 conclusive evidence that smoke cannot cause lung
8 cancer. His experiments were not done
9 quantitatively, however, and on these grounds alone
10 the conclusion which he draws is certainly not
11 justified."

12 Now in the conclusions of this document, are
13 there statements made by these individuals based upon
14 their review of this issue with all of these
15 individuals at these various medical institutions and
16 with the defendants themselves, such as American
17 Tobacco, Liggett & Myers, Philip Morris and the TIRC?
18 Do they make conclusions?

19 A. Yes. It's on page eight.

20 Q. Go to page eight, please. And doctor, can you
21 read conclusion one and conclusion three.

22 A. Conclusion one reads, "Although there remains
23 some doubt as to the proportion of the total lung
24 cancer mortality which can fairly be attributed to
25 smoking, scientific opinion in the U.S.A. does not

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1 now seriously doubt that the statistical correlation
2 is real and reflects a cause and effect
3 relationship."

4 And then number three, "The direct
5 carcinogenicity of smoke condensate to animal tissue,
6 which is consistent with direct causation, is now
7 fully confirmed but the evidence so far obtained
8 makes it unlikely that this activity is due to any
9 single 'super carcinogen' in smoke."

10 Q. Doctor, we saw earlier the 1994 congressional
11 hearings in front of Representative Waxman where the
12 seven executives lined up and denied that cigarette
13 smoking was addictive. Do you recall that?

14 A. I recall that, yes.

15 Q. Was there also testimony at that hearing on
16 behalf of the industry with regard to whether smoking
17 causes disease?

18 A. There was.

19 Q. Okay. And this would be some 36 years after

20 this document?
21 A. That's correct.
22 Q. Do you know if this document that we're
23 presently on, Exhibit 11028, ever saw the light of
24 day before this litigation?
25 A. Not to my knowledge.

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1 Q. Can you turn to Exhibit 4700, which would be in
2 the same volume.
3 A. Okay.
4 MR. CIRESI: Your Honor, we would offer
5 Exhibit 4700. It's the hearings -- the transcript of
6 the hearings before the Subcommittee on Health and
7 the Environment of the Committee on Energy and
8 Commerce, House of Representatives, 103rd Congress,
9 Second Session, April 28th, May 17th and May 26th,
10 1994. It's a public record.
11 MR. BERNICK: Your Honor, I believe that
12 the document is hearsay. The testimony was not taken
13 pursuant to the rules, and I don't believe that the
14 record reflects a foundation for this witness to be
15 able to testify concerning this document.
16 THE COURT: Well I can't imagine Congress
17 having a hearing that is only one page long.
18 MR. CIRESI: We have the entire document,
19 Your Honor. Just so we didn't have to put it all in.
20 THE COURT: Are you going to be introducing
21 the entire document?
22 MR. CIRESI: Yes, Your Honor. The exhibit
23 number is the entire document.
24 THE COURT: Okay.
25 MR. BERNICK: Our objection then would

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1 certainly still stand. It contains numerous
2 statements from numerous parties not subject to
3 cross-examination.
4 THE COURT: It's a public record. It will
5 be allowed, 4700.
6 BY MR. CIRESI:
7 Q. I'd like to go to page 375 where Mr. Glenn, the
8 let of CTR, Council for Tobacco Research, testified
9 as follows:
10 "Question: Do you believe that smoking causes
11 cancer?
12 "No, sir.
13 "Do you believe that smoking is addictive?
14 "No, sir."
15 To this day, doctor, do you know if any of these
16 defendants have ever publicly admitted that smoking
17 causes lung cancer or any cancer?
18 A. Only the Liggett Group, I think, has admitted
19 that.
20 Q. And that was since the institution of this
21 lawsuit?
22 A. That's correct.
23 Q. Can you go back, now, to Exhibit 11028. In this
24 document did the Liggett company make some comments

25 to these industry representatives with respect to the
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1 Council for -- the CTR, which Mr. Glenn was the head
2 of in 1994, but which was called the TIRC back in
3 1958, are there comments made by Liggett regarding
4 that organization?

5 A. Yes.

6 Q. Can you direct your attention to page five.

7 A. Okay.

8 Q. And could you read into the record what Liggett
9 & Myers told these industry representatives about
10 TIRC in 1958.

11 A. It's kind of in the middle of the page, ATTITUDE
12 OF U.S. INDUSTRY TO BIOLOGICAL TESTING" is the
13 heading. "Liggett & Myers stayed out of TIRC
14 originally because they doubted the sincerity of TIRC
15 motives and believed that the organization was too
16 unwieldly to work efficiently. They remain convinced
17 their misgivings were justified. In their opinion
18 TIRC has done little if anything constructive, the
19 constantly reiterated "not proven" statements in the
20 face of mounting contrary evidence has thoroughly
21 discredited TIRC, and the SAB" -- that's the
22 Scientific Advisory Board -- "of the TIRC is
23 supporting almost without exception projects that are
24 not related directly to smoking and lung cancer.
25 Liggetts felt that the problem was sufficiently

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1 serious to justify large-scale investment by the
2 Company directly in research" on their own.

3 Q. And in this Exhibit 11028, in 1958, do the
4 industry representatives also talk about the
5 marketing practices of the industry in America at
6 that time?

7 A. Yes.

8 Q. Can you direct your attention to page eight.

9 A. Okay.

10 Q. Under "FILTRATION AND RELATED PROBLEMS." Do you
11 see that?

12 A. Yes.

13 Q. I'd like you to go down to the paragraph
14 starting with the word "Although...."

15 A. Okay.

16 Q. "Although TIRC officially still takes the view
17 that 'causation' is not proven, in practice the
18 industry in U.S.A. has found a good deal of common
19 ground with the opposition. Unfortunately, however,
20 this not taken the form -- this has taken the form of
21 a highly undesirable competitive scramble for a
22 cigarette with the smallest amount of smoke
23 consistent with good flavor, paren, 'maximum
24 filtration for the smoothest smoke', close paren, and
25 advertising with implied health claims is in full

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1 cry."
2 What is being referred to there, sir?
3 A. Well it's the change so that if there are
4 implied health claims about a cigarette, then for a
5 person who is using the product, that reassures them.
6 If -- so if there are health claims being made that a
7 cigarette is safer or less hazardous, then the
8 individual is reassured by that.
9 Q. In 1958, was the industry engaged in what became
10 known as the tar derby because they were reducing tar
11 in cigarettes?
12 A. Yes.
13 Q. When you reduce tar, do you reduce nicotine?
14 A. They go together. They go hand in hand.
15 Q. I'd like to now direct your attention to a
16 document that came six months -- or excuse me.
17 I would like to now direct your attention to a
18 document that came six years after the 1958 document.
19 A. Okay.
20 Q. If you could direct your attention to Exhibit
21 10322, a Philip Morris document dated February 18th,
22 1964.
23 A. Okay.
24 Q. This is a document on the stationery of Philip
25 Morris Research Center, "SMOKING AND HEALTH,
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1 SIGNIFICANCE OF THE REPORT OF THE SURGEON GENERAL'S
2 COMMITTEE TO PHILIP MORRIS INCORPORATED, EVALUATION
3 REPORT."
4 Is this one of the documents that you reviewed,
5 sir?
6 A. Yes, it is.
7 Q. And does it form part of the basis for your
8 opinions in this case?
9 A. Yes, it does.
10 Q. Is the information contained in here information
11 that was addressed in other of the defendants'
12 documents that you reviewed?
13 A. Yes, it is.
14 Q. Can you direct your attention to the page which
15 is typed that says "February 18, 1964."
16 MR. CIRESI: Your Honor, we would offer
17 Exhibit 10322.
18 MR. BERNICK: No objection.
19 THE COURT: The court will receive 10322.
20 BY MR. CIRESI:
21 Q. Shows the date, the title of the report,
22 "SMOKING AND HEALTH, SIGNIFICANCE OF THE REPORT OF
23 THE SURGEON GENERAL'S COMMITTEE TO PHILIP MORRIS
24 INCORPORATED," and then it shows a distribution list
25 including Hugh Cullman, who was a senior executive,
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1 and also Dr. Wakeham, who we've heard from
2 previously.
3 In this report, is there reference to the
4 validity of the Surgeon General's report of 1964?
5 A. There is.

6 Q. And what was the major finding of the Surgeon
7 General's report of 1964?
8 A. That cigarette smoking caused lung cancer.
9 Q. Can you direct your attention to the first page,
10 which has a number of the top that says 567.
11 A. Yes.
12 Q. Okay. And the Bates number, last three, are
13 615.
14 A. Okay.
15 Q. "INTRODUCTION AND SUMMARY." And I'd like to
16 direct your attention to the second paragraph.
17 "The onus of proof has been moved by the
18 report" --
19 Which report is being referred to there?
20 A. The Surgeon General's report, the '64 report.
21 Q. -- "from its usual position with the industry's
22 accusers to the tobacco industry itself. Meeting
23 this challenge affords Philip Morris a splendid
24 opportunity to gain a competitive edge through
25 effective technical activity. Positive programs to
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1 cure ills cited in this report, whether real or
2 alleged, are recommended, as little basis for
3 disputing the findings at this time has appeared."
4 Now is this consistent with what the industry
5 found out six years earlier when they did their own
6 internal survey?
7 A. Yes.
8 Q. Can you turn to the next page.
9 Was there a recommendation in this report that
10 due to the Surgeon General's report and competitive
11 pressures, that the industry ought break up its
12 common front?
13 A. Yes.
14 Q. Did the industry, based on your review of the
15 documents, break up its common front in denying
16 causation over the ensuing decades?
17 A. No.
18 Q. If you look at the bottom of this page two,
19 states as follows, "Health impact will surely be an
20 important, perhaps the most important, basis for
21 competition in the industry in the next few years.
22 Competitive pressures suggest a break up of the
23 common front approach of the industry through TI and
24 TIRC. While R. J. Reynolds continues to advocate a
25 joint front, sit tight, status quo approach, paren,
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1 it has the most to lose from any change in status
2 quo, close paren, others like American and Liggett
3 and Myers, sanguine for improved competitive
4 positions, show signs of bolting and have capitalized
5 with their new products on early reactions to the
6 report. The greater the long term market impact of
7 the report, the more intense will there be health
8 competition, which is to say technical competition,
9 among major tobacco companies."
10 Now doctor, post-1964, did the defendants

11 continue to reduce tar and nicotine?
12 A. They reduced the tar and nicotine deliveries,
13 yes.
14 Q. And during that time did they make implied
15 health claims about the cigarettes?
16 A. Yes, they did.
17 Q. During that period of time did they also
18 investigate the nicotine technology?
19 A. Yes.
20 Q. And during that period of time were there
21 advertisements with respect to the implied health
22 claims that they were making?
23 A. Yes, there were.
24 Q. During that period of time did they -- from your
25 review of the documents, did they continue to feed

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1 information to smokers which would serve to support
2 the rationalization and denial that you've talked
3 about?
4 A. Yes, they did.
5 Q. Can you direct your attention to Exhibit 11102.
6 A. Okay.
7 Q. This is a B.A.T/B&W document dated October 18th,
8 1979?
9 A. Correct.
10 Q. And it's produced by B.A.T. Company, Ltd.?
11 A. Yes.
12 Q. Is this one of the documents that you reviewed
13 during the course of this litigation?
14 A. Yes, it is.
15 Q. Is it one of the documents that forms part of
16 the basis of your opinion?
17 A. Yes, it is.
18 Q. And is it consistent with regard to the subject
19 matters that the other documents you reviewed dealt
20 with?
21 A. Very much so.

22 MR. CIRESI: Your Honor, we would offer
23 Exhibit 11102.

24 MR. BERNICK: No objection.

25 THE COURT: Court will receive 11102.

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1 BY MR. CIRESI:
2 Q. Now the title of this document is "CIGARETTE
3 SMOKING, HEALTH, AND DISSONANCE (PROJECT LIBRA)."
4 And you'll see a distribution list on the left-hand
5 side there.
6 Can you direct your attention, first, to page 84
7 of this document.
8 A. Okay.
9 Q. And at that part of this report, is B.A.T and
10 B&W dealing with the rationalization and health
11 reassurance issues, doctor?
12 A. Yes, they are.
13 Q. And can you point out where that is?
14 A. Well it's really down in the -- "How does the
15 smoker remain a smoker despite apparently good

16 reasons for him to quit? One way of reducing the
17 conflict" -- and that's the internal conflict for a
18 smoker who may recognize that -- that they should
19 quit, so -- "One way of reducing the conflict within
20 the smoker is to deny, devalue or otherwise
21 rationalize the health argument." And that fits into
22 the addictive process of denial and rationalization.
23 Q. And it goes on to say that "The four modes of
24 potential conflict reduction discussed so far rely on
25 either a fatalistic disposition to health or a faith

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1 in 'safer' smoking, or a denial of anti-smoking
2 information."

3 A. That's correct.

4 Q. And did you have an understanding of whether or
5 not The Tobacco Institute's policy, as enunciated in
6 that exhibit we saw, to create doubt, was that
7 intended to create doubt in smokers to give them an
8 ability to deny?

9 MR. BERNICK: Objection, Your Honor. I
10 believe that that invades the province of the jury.
11 There's not adequate foundation for him to speak to
12 the intent of a statement.

13 THE COURT: You'll have to rephrase the
14 question, counsel.

15 BY MR. CIRESI:

16 Q. Did The Tobacco Institute document reflect that
17 the tobacco industry was attempting to create a
18 controversy?

19 MR. BERNICK: Again, Your Honor, that is
20 precisely the question the jury will have to decide.

21 THE COURT: No, that's a different
22 question. You may answer that.

23 THE WITNESS: Would you repeat the
24 question?

25 MR. CIRESI: Sure. Can you read it back,
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1 please.

2 (Record read by the court reporter.)

3 A. Yes, it did. And they were.

4 Q. And from your review of the documents of the
5 various defendants, did you find that that is what
6 they were doing during this period of time?

7 A. That's correct.

8 Q. And if you go to page 80 of this document, --

9 A. Okay.

10 Q. -- another term that you mentioned was
11 "rationalization," and does this document reflects --
12 reflect B.A.T and B&W's understanding and knowledge
13 of that conflict?

14 A. Yes, it does.

15 Q. Is that at the top of that page?

16 A. They use the term. They describe it very
17 accurately. Rationalization through modifying
18 smoking behavior is a feasible means of conflict
19 reduction. When a person is using a drug and they
20 know that it's possibly causing them harm and they

21 continue to use the drug, that's part of the
22 addictive process. So the way that a person
23 overcomes that internal conflict is to rationalize
24 that and to try to explain it away.
25 Q. And with regard to low tar/low nicotine, doctor,
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1 we've heard the term "compensation." Were the
2 defendants aware of compensation of smokers in
3 smoking low tar --
4 A. Yes, they were.
5 Q. -- low nicotine cigarettes?
6 A. Yes, they were.
7 Q. Did they take any action to exploit that
8 conduct?
9 A. Absolutely.
10 Q. Okay. And how do you know this?
11 A. My patients tell me. If you ask the question:
12 Why did you switch to low tar/low nicotine cigarette?
13 They say they thought it was safer. That's how they
14 do it.
15 Q. And did the defendants' own documents reflect
16 that?
17 A. Yes, they did.
18 Q. Now when you're treating people in the Nicotine
19 Dependence Clinic, do you do a demonstration for them
20 on compensation?
21 A. Yes, we talk about it, because most of them
22 don't understand it at all. They don't understand
23 about low tar/low nicotine cigarettes.
24 Q. And does the demonstration have to do with the
25 ventilation holes on the cigarette?

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1 A. That's the most obvious thing that you can
2 demonstrate to the patients.
3 Q. And do you have a pack of Marlboro Reds and
4 Marlboro Lights and Merits with you?
5 A. I do.
6 Q. Okay. And can you demonstrate that for the
7 ladies and gentlemen of the jury?
8 A. Sure can.
9 MR. CIRESI: Your Honor, could he step down
10 to them?
11 THE COURT: You're not going to light it,
12 are you, doctor?
13 THE WITNESS: No, sir. I'm even nervous
14 about having them in my pocket actually.
15 Actually I want to draw first.
16 Can you see?
17 A. When we talk about the cigarette, we talk about
18 the cigarette as a rod, and we've heard about the
19 filtering mechanism of the rod. And how this all
20 works is it burns on this end, and the gases are
21 formed. Nicotine is in a liquid form to begin with
22 and it is basically just distilled across the rod.
23 As it -- as it burns it heats up, it volatilizes, it
24 becomes a gas, and then as it cools it becomes a
25 droplet again, and then it comes out the end of the

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1 cigarette in the form of an aerosol, which is
2 basically a tar particle. And I'll make a great big
3 one. And on that tar particle, in the aerosol, is
4 water and also nicotine. So it's a -- when you blow
5 smoke out, smoke is an aerosol.

6 When the measurements are made with the Federal
7 Trade Commission machines, it basically measures the
8 air and gas mixture, smoke mixture that comes out of
9 the end of the cigarette. And if you think about it
10 as a billows mechanism, and this is the only way I
11 can draw it, with the cigarette over here burning,
12 and then the billows goes up and down but it goes up
13 and down at the same inhalation every time, so it
14 draws in a certain amount of smoke into -- into this
15 chamber. And then the smoke, which I'll just depict
16 like this, is taken out, and for simplistic purposes
17 is run through a gauge or a certain measuring device
18 to measure the tar and nicotine levels. And that's
19 what's reported on the cartons of cigarettes and in
20 the advertisements. This is the level that's
21 reported.

22 One way of fooling the machine, if you will, is
23 to reduce the concentration of these particles in
24 the -- in the chamber. So if indeed this is a,
25 quote, full-flavored cigarette, with that amount

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1 of -- of particles in there, that will measure a
2 certain amount, and if you put a cigarette over here,
3 a, quote, low tar/low nicotine cigarette, and the
4 amount of particles that come in are more dilute,
5 then when you do the measurement over here on this
6 side, it will read much lower.

7 And so one way of doing that -- and there are
8 multiple ways of doing it, but the most common way of
9 doing it is to modify the cigarette in order for
10 there to be more air to come in. And one way of
11 doing that is to put ventilation holes on the filter.
12 And so when you have ventilation holes on the filter,
13 it entrains air into the stream and makes the smoke
14 more dilute. So that you end up with this situation:
15 more dilute smoke coming in, and the measurement is
16 low.

17 Now the problem with this is that this is a
18 machine. It takes a single puff in a certain volume
19 every time. It also doesn't get emphysema and lung
20 cancer, but -- and they use them over and over again,
21 but it does it every -- every time the same way. But
22 smokers don't smoke that way. Smokers compensate for
23 this by taking deeper breaths and holding their
24 breath longer so that they can extract a larger
25 amount of nicotine from the cigarette than the

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1 machines can.

2 And one way of looking at that will be to look
3 at some cigarettes and looking at the ventilation
4 holes. So we'll start out with a Marlboro Red, which
5 is a -- what I used to smoke. It doesn't say on here
6 that it's a full-flavored cigarette, but I think that
7 it probably is. It does say you get five miles if
8 you buy a pack. I'm not sure what -- what that
9 actually means.

10 So let's look at this cigarette and see what's
11 in it. So I'll cut it this way, and of course you
12 can see the tobacco, and then -- get a little light
13 here -- and then you can see little holes. See the
14 little holes?

15 Can you pass that around?

16 And that's a full-flavored cigarette.

17 And then if you look at a Marlboro light, which
18 is a lower tar and nicotine cigarette, cut it
19 apart -- and by the way, the tobacco in these two
20 cigarettes is the same. Same tobacco. No difference
21 in the tobacco. And that's the thing that the
22 patients don't understand at all. They think that
23 something's been done to the tobacco, but the tobacco
24 in the Marlboro Light and the regular Marlboro is the
25 same.

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1 And so for this one, you can kind of compare the
2 differences, because instead of one layer -- one row
3 of holes, this one has two rows of holes. More
4 ventilation.

5 And then if you go to one that says the low tar
6 enriched flavor, I'm not exactly sure what that
7 means, but lower tar delivery in this scheme of
8 things, and this is a Merit, and so this one has two
9 rows of holes, but they're more obvious, aren't they?
10 They're much larger.

11 So if you put them all together -- I don't know
12 where the other light went -- but if you put them all
13 together, then -- then you can identify the holes.

14 Let me get the light and I'll show Your Honor.
15 Would you like to see these, Your Honor?

16 THE COURT: When they're finished.

17 THE WITNESS: Okay.

18 A. So the Merit has bigger holes, same general
19 vicinity, two rows.

20 When I did this demonstration to a group of
21 patients, oh, couple weeks ago, the patients are
22 always a little bit embarrassed to say that they have
23 cigarettes with them, so I usually just ask do you
24 have any cigarettes with you, because they're using
25 the process of trying to stop when they have a group

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1 program, and one gentleman had a package of Kent III,
2 Roman numeral III, which is an ultralight, and it had
3 six rows of ventilation holes. So he was getting a
4 lot of air mixed in, but he was able to compensate
5 for that by taking deeper breaths, holding his breath
6 longer, and able to get nicotine.

7 This is the Marlboro, and then -- it's one
8 little thin line of holes. See it?
9 I'll clean this mess up later.
10 THE COURT: Maybe we should take a short
11 recess and allow the doctor to clean up the mess.
12 THE WITNESS: Thank you.
13 (Recess taken.)
14 THE CLERK: All rise. Court is again in
15 session.
16 (Jury enters the courtroom.)
17 THE CLERK: Please be seated.
18 MR. CIRESI: Your Honor, we'd offer trial
19 Exhibit 30252, 30112. The first exhibit is a box of
20 Marlboro Lights, second Marlboro Reds, Exhibit 30114,
21 which is a box of Merit, and Exhibits 25005 and
22 25006, the last two for illustrative purposes, they
23 are the handwritten notes on the write board.
24 MR. BERNICK: No objection, Your Honor.
25 THE COURT: Court will receive those as
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1 exhibits.
2 BY MR. CIRESI:
3 Q. Doctor, if we could for one minute before we go
4 on on this issue, I'd like to go back to Exhibit
5 11938, which is in volume one. It's the B.A.T 1962
6 document.
7 A. Okay.
8 Q. As you'll recall, this was the document that was
9 dealing with the various proposed projects, MAD
10 HATTER I, MAD HATTER II, et cetera.
11 A. Yes.
12 Q. And if you turn to page nine of that document,
13 with regard to BATCo's state of knowledge with regard
14 to nicotine and research into nicotine vis-a-vis
15 knowledge that was in the scientific literature back
16 at that time, and does the author of this report
17 state what the status of BATCo's knowledge is?
18 A. They did. First -- first paragraph on the
19 screen.
20 Q. "As a result of these various researches we now
21 possess a knowledge of the effects of nicotine far
22 more extensive than exists in published scientific
23 literature. It is indeed so extensive and represents
24 so much new thought that it is not easy to condense
25 the material of these several reports and working
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1 papers without the risk of over-simplification."
2 Doctor, when you looked at the defendants'
3 documents, did you find, as a person who has been
4 trained in this field, new information regarding
5 nicotine and its addictive qualities?
6 A. I did.
7 Q. If we could go back, then, to the lower tar/
8 lower nicotine cigarettes, approximately what
9 percentage of people smoke those type of cigarettes?
10 A. I think the vast majority, it's over 80 percent
11 in the current environment, smoke low tar/low

12 nicotine cigarettes.
13 Q. Have the lung cancer rates gone down since low
14 tar and low nicotine came on the market?
15 A. No, they have not.
16 Q. I'd like to now direct your attention to the
17 defendants' knowledge with respect to low tar and low
18 nicotine, specifically with regard to smokers' use of
19 those types of cigarettes.
20 A. Okay.
21 Q. Can you direct your attention to Exhibit 11889.
22 And this is a document that's been introduced into
23 evidence. It's a Philip Morris document, the
24 cigarette consumer of March 20th, 1984.
25 A. 11899?

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1 Q. It's 11899.
2 A. Okay.
3 Q. And in that document, can you turn to page ten.
4 Does Philip Morris reflect there what people think
5 with regard to safety of low tar/low nicotine based
6 on their own research?
7 A. They do.
8 Q. And if we look at the lower part of that page,
9 it states, "Historically, motivation has come from
10 health issue, people willing to stick with lower tar
11 because they are doing themselves a favor, most
12 successful new brands have had low tar/health
13 motivation, colon, Merit."
14 Is that the type of information that you saw in
15 the defendants' documents as you reviewed them?
16 A. It is. Yes, it is.
17 Q. If you go to Exhibit 17994, which is a Lorillard
18 document dealing with this subject matter, and that
19 would be in volume two -- 17994.
20 A. Okay.
21 Q. The title of that document is "SHF CIGARETTE
22 MARKETPLACE, OPPORTUNITIES SEARCH AND SITUATION
23 ANALYSIS, VOLUME II, Management Report" for
24 Lorillard, December 1976. Is this one of the
25 documents you've reviewed?

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1 A. Yes, it is.
2 Q. Does it form part of the basis of your opinions
3 in this case?
4 A. Yes, it does.
5 Q. Is it the type of information that you found in
6 other documents of the defendants that you were
7 reviewing?
8 A. Yes, it is.
9 MR. CIRESI: Your Honor, we would offer
10 Exhibit 17994.
11 MR. BERNICK: No objection.
12 THE COURT: Court will receive 17994.
13 BY MR. CIRESI:
14 Q. On the title page, doctor, it says "SHF
15 CIGARETTE MARKETPLACE."
16 A. Yes.

17 Q. Is SHF super high filtration?
18 A. That's correct.
19 Q. If you could, please, would you turn to page
20 seven first.
21 A. Okay.
22 Q. And this deals with low tar and nicotine
23 cigarettes.
24 A. Yes.
25 Q. And first of all I'd like to direct your
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1 attention to the first part. "What is tar? What is
2 nicotine?
3 "When separately discussed, nicotine is usually
4 defined as a chemical or an addictive drug; tar is
5 seen as a thick, gooey residue.
6 "Most smokers, however, do not really understand
7 what tar and nicotine are, or the difference between
8 the two. 'Tar and nicotine' is a term commonly used
9 as a single word."
10 Is that consistent with what you found in your
11 clinical experience?
12 A. It is.
13 Q. And when we go down to the "Advantages and
14 Disadvantages of Low Tar and Nicotine Cigarettes," do
15 you find in your own clinical experience that people
16 believe that cigarettes low in tar and nicotine have
17 different tobacco ingredients or different kinds of
18 filters than other cigarettes?
19 A. Yes, but most common they think it's something
20 that's been done to the tobacco to remove all the
21 harm -- all the chemicals or the substances that
22 might cause harm. That's -- they publish along that.
23 Q. Do the people that come into your clinic, and
24 those who smoke low tar and nicotine cigarettes,
25 generally do so because they believe such cigarettes
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1 are better for them?
2 A. They believe they're safer, yes.
3 Q. And if we go to the "KEY HIGHLIGHTS" of this
4 research project on behalf of Lorillard, this is on
5 page two.
6 A. Okay.
7 Q. And I'd like to direct your attention to number
8 two and ask you if that's consistent with what you
9 heard from people that come into the Mayo nicotine
10 clinic.
11 A. Yes, it is. Health concerns are their usual
12 reason for switching to a low tar and low nicotine
13 cigarette. They think that they're safer.
14 Q. Can you turn now to a B.A.T document in 1977,
15 which is Exhibits 10584 and 10585. 10584 is the
16 cover letter. That would be in volume one.
17 A. Okay.
18 Q. Are these two documents that you reviewed in
19 order to prepare yourself to testify?
20 A. Yes, they are.
21 Q. And do they form part of the basis of your

22 opinion?
23 A. They do.
24 Q. And are they consistent with the other documents
25 that you reviewed with regard to the subject matters
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1 that are discussed therein?
2 A. Yes, they are.
3 MR. CIRESI: Your Honor, we would offer
4 Exhibit 10584 and 10585, which is the cover letter
5 and the document itself, of B.A.T in 1977.
6 MR. BERNICK: No objection.
7 THE COURT: The court will receive 10584
8 and 10585.
9 BY MR. CIRESI:
10 Q. 10584, first of all, is dated April 28th, 1977,
11 has a "RESTRICTED" notation on it, and it indicates
12 that in the first paragraph that it had been approved
13 by Mr. Sheehy, who was the chairman of BATCo. And it
14 is written by M. L. Short, who is -- excuse me, P. L.
15 Short, who's the marketing manager of BATCo.
16 If you turn, then, to the document itself, which
17 is the next exhibit, the title of the exhibit is
18 "SMOKING AND HEALTH, ITEM 7 : THE EFFECT ON
19 MARKETING." And in the first paragraph we see that
20 this was a senior marketing conference, "Marketing in
21 the '80s," held at Chelwood in October 1976 and
22 attended by the No. 1s and marketing directors from
23 North America, Australia, Europe and Brazil.
24 Do you see the term No. 1s a lot in the
25 documents, doctor?

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1 A. Yes.
2 Q. Do you know what that refers to?
3 A. I think it's the presidents or the CEOs.
4 Q. And if you go down to "Future Prospects," does
5 that document reflect BATCo's position that their
6 overall marketing policy was to maintain faith and
7 confidence in the smoking habit, whether brand choice
8 is in traditional or not in particular markets?
9 A. That's what it says.
10 Q. And was this consistent with the type of
11 information you saw in the other defendants'
12 documents during the course of your review?
13 A. It is.
14 Q. And we see in the same paragraph a strategy that
15 B.A.T tends to employ. "This means that B.A.T will
16 not remain on the defensive, by simply reacting to
17 alleged 'health' hazards and related competitive
18 challenges: instead, we will actively seek out all
19 worthwhile prospects for brand and product
20 reassurance in marketing throughout the world."
21 Now the term "product reassurance," did you
22 learn that had a significant meaning to the
23 defendants regarding their --
24 A. It's kind of what we talked about as reassuring
25 the consumer as far as the health risks are

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1 concerned, to make a product that -- that appeared to
2 be safer and to market that in a way that they
3 describe here. It's an overall marketing policy.
4 Q. And in this document, did B.A.T project out into
5 the future with respect to the number of smokers who
6 might be moving to the low tar category?
7 A. Yes. I believe they said something like over 80
8 percent by the early 1990s. I can't find the exact
9 spot.
10 Q. Can you go to page two, please.
11 A. Okay. Yes, "For example, in the U.S.A., it has
12 been forecast that by 1990 over 80 percent of the
13 brands will be in the low tar category."
14 Q. Now if you direct your attention, please, to
15 page three of this document, does this part of the
16 document, which relates to communication, also relate
17 to providing consumer reassurance?
18 A. Yes. That's the word that's underlined at the
19 very top. Emphasized.
20 Q. Let me read this. "All work in this area should
21 be directed towards providing consumer reassurance
22 about cigarettes and the smoking habit. This can be
23 provided in different ways, e.g. by claimed low
24 deliveries, by the perception of low deliveries and
25 by the perception of 'mildness'. Furthermore,

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1 advertising for low delivery or traditional brands
2 should be constructed in ways so as not to provoke
3 anxiety about health, but to alleviate it, and enable
4 the smoker to feel assured about the habit and
5 confident in maintaining it over time."
6 Now doctor, on that type of approach and
7 philosophy, was that reflected in the defendants'
8 documents that you reviewed?
9 A. Yes. Over and over again. Another euphemism
10 for this is health reassurance.
11 Q. And under the "Goodwill" section it states that
12 "In the first place, the goodwill of existing brands
13 must be maintained by a planned approach to reduced
14 deliveries, via research and product development.
15 Here, we should (a) seek to obtain the edge over
16 competitors (b) ensure that smoking satisfaction is
17 achieved by franchise smokers within the range of
18 smoker 'compensation' of the original product."

19 What's being discussed there?

20 A. Well it's basically a range of -- the addiction
21 range, if you want to think about it that way, where
22 there is a level of nicotine delivery that's required
23 to keep a person using the product. So there's kind
24 of a window, if you will, and the products that they
25 design or have designed over the years have focused

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1 on that window. Some people would require more
2 nicotine, so they'd be on this edge of the window,

3 other people would require less. So there is a broad
4 window that the products address so that they can
5 basically accomplish the goal of providing whoever
6 the consumer is with the amount of nicotine required
7 to get them hooked.

8 Q. Now does this document also discuss compensation
9 as an involuntary mechanism of a smoker in modifying
10 the method of smoking?

11 A. Yes. That's down in the -- oh, the one, two,
12 three -- fourth -- fourth paragraph. "This, quote,
13 mechanism, end quote, involves involuntary
14 modifications in the method of smoking a cigarette."

15 Q. And the mechanism they're talking about is
16 referring to the previous sentence which talks about
17 smoker compensation?

18 A. Correct. Most people do this unconsciously or
19 subconsciously. They don't -- we have --

20 I have some patients who consciously cover up
21 the little ventilation holes, but most people don't
22 realize that they're even there. If you ask a
23 hundred smokers do you realize that they have
24 ventilation holes in the -- in the filters, most of
25 them don't know that they exist to begin with. I

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1 have some patients who will actually dump their
2 cigarettes out in the morning and tape up the little
3 holes. Now that's a whole different issue. They
4 were -- they're aware of the ventilation holes and
5 they know what they do. When I was smoking, if I
6 wanted to get more -- more nicotine delivered in, I
7 just ripped the filter off and turned around and
8 smoked it the other way. Just a lot easier that way.

9 Q. The ventilation holes, do you learn from your
10 clinical experience whether people just inch
11 voluntarily covered them up?

12 A. Well they can, but most people don't realize
13 that they are even there. They're very tiny and
14 most -- most people don't even -- they're not aware
15 that they are. Depends on what the position of the
16 holes are and how the person holds the cigarette.
17 Some may occlude them without even knowing it.
18 Others do it on purpose.

19 Q. Can you direct your attention, doctor, to
20 Exhibit 10306.

21 A. Which book is it in?

22 Q. That's in the same book. I'm sorry. Volume
23 one.

24 A. Okay.

25 Q. 10306.

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1 A. Yeah.

2 Q. This is another B.A.T document dated 10-12-71
3 entitled "A NEW PRODUCT" with a "Private &
4 Confidential" notation.

5 Is this a document that you've reviewed, sir?

6 A. Yes, it is.

7 Q. Is it one of the documents that forms the basis

8 for your opinions in this case?
9 A. Yes, it is.
10 Q. And is the information here addressing the same
11 issues that you saw in other defendants' documents?
12 A. Yes, it is.
13 MR. CIRESI: Your Honor, we would offer
14 Exhibit 10306.
15 MR. BERNICK: No objection.
16 THE COURT: Court will receive 10306.
17 BY MR. CIRESI:
18 Q. Now if you go to the first page, it says "A NEW
19 PRODUCT," and up in the upper left-hand corner,
20 "Private & Confidential," and on the back page you'll
21 see Mr. Short's signature, who was the marketing
22 director at BATCo -- very hard to make out, but --
23 and the date is also back there of 10-2-71 -- excuse
24 me, 10-21-71.
25 Can you direct your attention, please, back to
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1 the first page, doctor.
2 A. Okay.
3 Q. Now this reflects a visit that BATCo made to the
4 United States?
5 A. Yes.
6 Q. And that in the U.S., manufacturers were
7 concentrating on low TPM --
8 Is that tar particulate matter?
9 A. Total particulate matter.
10 Q. Total particulate matter. That refers to the
11 tar.
12 A. Correct.
13 Q. Okay.
14 -- "and Nicotine segment in order to create
15 brands with distinctive product features which aim in
16 one way or another to reassure the consumer that
17 these brands are relatively more, quote, healthy, end
18 of quote, than orthodox blended cigarettes like
19 VICEROY, MARLBORO and WINSTON. Hence B&W is devoting
20 its efforts entirely to the Hi-Fi segment, and its
21 two major projects -- VANGUARD and TODAY --
22 demonstrate this strategy."
23 Now during this period of time, doctor, is this
24 document representative of what the other defendants
25 were doing with regard to these low tar and low
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1 nicotine cigarettes?
2 A. Yes, it is.
3 Q. And during this period of time when they were
4 lowering the tar and nicotine, were they also
5 attempting, based on their documents, to increase the
6 physiological effect?
7 A. Yes, they were.
8 Q. Can you direct your attention to Exhibit 14009.
9 That would be in book number two.
10 A. Okay.
11 Q. This document is one we've already looked at.
12 It's already in evidence, doctor. This is a

13 Lorillard document, presentation by Dr. Spears. Do
14 you recall that?

15 A. Yes.

16 Q. And can you turn to page three, at the bottom,
17 and at the bottom of that page is Dr. Spears
18 referencing the issue of tobacco modifications to
19 optimize absorption of smoke nicotine?

20 A. Yes.

21 Q. And let me just read part of this document
22 starting at about the fifth or sixth last line,
23 "Technology for increasing...."

24 "Technology for increasing the nicotine content
25 of cigarettes can be developed through recovery of

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1 nicotine lost in tobacco drying operations within two
2 years, and new varieties of tobacco can be grown
3 which are essentially free of nicotine within two
4 years. It is our present intent to develop low
5 nicotine brands, with the maximum physiological
6 impact, within the next year."

7 Now did you see other defendant companies
8 addressing the issue of lowering the tar and
9 nicotine, but increasing or maintaining the
10 psychological kick, if you will, from nicotine?

11 A. Yes, I did.

12 Q. And during this same period of time were the
13 defendants advertising and attempting to reassure
14 smokers and capitalize on the, quote, health impact
15 of lower tar/lower nicotine cigarettes?

16 MR. BERNICK: Objection, --

17 A. Yes.

18 MR. BERNICK: -- Your Honor. Again, having
19 the witness speak to issues of intent invade the
20 province of the jury.

21 MR. CIRESI: I'll restate it, Your Honor.

22 THE COURT: Restate it, please.

23 BY MR. CIRESI:

24 Q. During this same period of time, were defendants
25 advertising low tar/low nicotine cigarettes with

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1 certain messages?

2 MR. BERNICK: Your Honor, I'd object to
3 that on grounds of lack of foundation. It exceeds
4 the scope of expertise of this witness. He's not
5 qualified to speak to marketing issues.

6 THE COURT: I think you'll have to rephrase
7 that. If you're talking about from the documents
8 he's reviewed, you'll have to address that.

9 MR. CIRESI: All right. Thank you, Your
10 Honor.

11 BY MR. CIRESI:

12 Q. Did you review certain of the ads of the
13 defendants during this period of time?

14 A. Yes, I did.

15 Q. And did they advertise low tar/low nicotine
16 cigarettes?

17 A. Yes, they did.

18 Q. Okay. And can you look at Exhibit 7069 in
19 volume one.
20 A. Okay.
21 Q. Is this one of the documents you reviewed?
22 A. Yes, it is.
23 Q. And it is a Lorillard ad for True?
24 A. Yes.
25 Q. And does it relate to low tar/low nicotine?
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1 A. Yes, it does.
2 Q. And does it relate to the health-reassurance
3 issue that you testified about?
4 A. Absolutely.
5 Q. And does it form part of the basis of your
6 opinion in this case?
7 A. Yes, it does.
8 MR. CIRESI: We'd offer Exhibit 7069.
9 MR. BERNICK: We have no objection, Your
10 Honor, to the document itself, but I will have an
11 objection to this line of examination.
12 THE COURT: Court will receive 7069.
13 BY MR. CIRESI:
14 Q. The ad reads "I'd heard enough to make me decide
15 one of two things: quit or smoke True. I smoke
16 True. The low tar, low nicotine cigarette. Think
17 about it."
18 Is this the type of ad that you were referring
19 to that dealt with the health reassurance issue,
20 doctor?
21 A. Yes, it is.
22 MR. BERNICK: I -- sorry. I'd object to
23 this line of examination. I don't believe there's a
24 foundation for it. I believe it exceeds the scope of
25 his expertise. He's not qualified in marketing.
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1 THE COURT: Overruled. You may answer.
2 A. When a person has a dependence on nicotine and
3 is smoking cigarettes, and they come to this juncture
4 that they may be motivated to try to stop smoking,
5 that's what we want to try them -- have them try to
6 do. To be reassured that there may be another
7 alternative which would reassure them as far as their
8 health is concerned is -- is really contrary to what
9 this man was about to decide to do, apparently was
10 about to decide to do, which was to stop smoking.
11 And we call that in -- in our field, we call it
12 movement through the stages of change. And if we get
13 a person to the point of getting ready to stop, then
14 we want to try to capitalize on that, and -- and
15 that's where this plays into the health reassurance
16 for a person who has this problem.
17 Q. In your clinical experience, do the patients
18 discuss this with you?
19 A. Yes, they do.
20 MR. BERNICK: Your Honor, I'm sorry to
21 interrupt. I have the same objection, and it
22 doesn't -- it doesn't really depend upon his

23 experience with patients, it depends upon his
24 expertise. So can I have a continuing objection if
25 Your Honor has already ruled on this matter?

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1 THE COURT: What are you continuing to
2 object to, counsel?

3 MR. BERNICK: I'm continuing to object to
4 his offering any kind of testimony concerning
5 marketing or consumer-perception issues because they
6 go beyond the scope of his expertise.

7 THE COURT: That's over -- that's
8 overruled. I don't think -- I think this is within
9 his expertise as he's testified.

10 MR. CIRESI: Had you finished, doctor?

11 THE WITNESS: I think so.

12 MR. CIRESI: All right.

13 BY MR. CIRESI:

14 Q. Can you direct your attention to Exhibit 5677.
15 Is this another copy sheet or an ad that you reviewed
16 with regard to the health-reassurance issue?

17 A. Yes, it is.

18 Q. And does this copy of an ad form part of the
19 basis of your opinion?

20 A. Yes, it does.

21 MR. CIRESI: Your Honor, we offer Exhibit
22 5677.

23 MR. BERNICK: No objection to the exhibit,
24 Your Honor. Subject to Your Honor's prior rulings,
25 we have a continuing objection to this line of

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1 examination.

2 THE COURT: All right. Court will receive
3 5677.

4 Q. States "I switched to less tar. Carlton is
5 lowest in tar and has a light mild taste I really
6 enjoy! I switched. You can too!"

7 And then it shows a reference down below to
8 "Carlton is lowest in tar and nicotine," above
9 that -- I don't know if you can pick it up on the
10 overhead. Can you read the writing that's above the
11 Carlton? You see it on your exhibit, doctor? There
12 it is. There it is.

13 A. Says "U.S. Government Tested Method Confirms" --
14 something -- "King Soft Packs."

15 Q. Is this the type of ad that lends itself to the
16 health-reassurance campaign that we saw the
17 defendants intended to conduct in their documents
18 that we looked at?

19 MR. BERNICK: Your Honor, he's asking the
20 witness to testify to intent.

21 THE COURT: Sustained.

22 MR. CIRESI: Okay.

23 Q. Is this consistent with the documents that we
24 saw concerning the health-reassurance campaigns?

25 A. Yes, it is.

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1 Q. Can you direct your attention to Exhibit 8574.
2 A. Okay.
3 Q. Is this another ad copy that you reviewed with
4 regard to the health-reassurance strategy --
5 A. Yes, it is.
6 Q. -- of the defendants?
7 A. Yes, it is.
8 Q. Does it form part of the basis of your opinion?
9 A. Yes, it did.

10 MR. CIRESI: Your Honor, we would offer
11 Exhibit 8574.

12 MR. BERNICK: No objection to the exhibit
13 itself, Your Honor.

14 THE COURT: Court will receive 8574.
15 BY MR. CIRESI:

16 Q. This ad reads "National Smoker Study: Merit
17 Taste Eases Low Tar Decision. 'Enriched Flavor'
18 tobacco proving real alternative to high tar smoking.
19 "How difficult it is for smokers of high tar
20 cigarettes to make a switch to a lower tar brand?
21 Recent nationwide research confirms MERIT flavor
22 makes the low tar decision easy.

23 "Confirmed: 85 percent of MERIT smokers say it
24 was an easy switch from high tar brands.

25 "Confirmed: 9 out of 10 MERIT smokers not
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1 considering other brands.
2 "Confirmed: Overwhelming majority of MERIT
3 smokers say their former high tar brands weren't
4 missed.
5 "And in interviews among current high tar
6 smokers:
7 "Confirmed: Majority of high tar smokers rate
8 MERIT taste equal to or better than leading high tar
9 cigarettes tested! Cigarettes having up to twice the
10 tar.
11 "Confirmed: Majority of high tar smokers
12 confirm taste satisfaction of low tar MERIT.
13 "MERIT has proved conclusively that it not only
14 delivers the flavor of high tar brands -- but" -- I
15 think it says "continues to satisfy."
16 A. Yes.
17 Q. "The ability to satisfy over long periods of
18 time could be the most important evidence to date
19 that MERIT science has produced what it claims. The
20 first real taste alternative for high tar smokers."
21 Is that consistent with the type of documents in
22 the marketing campaign that you saw in defendants'
23 documents?
24 A. Yes, it is.
25 Q. And Merit is a Philip Morris cigarette?

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1 A. Yes, it is.
2 Q. Can you now turn to Exhibit 12353. This is an
3 ad copy for Vantage cigarette by RJR?

4 A. Yes.
5 Q. And is this one of the documents that you
6 reviewed that forms part of the basis of your opinion
7 with respect to low tar/low nicotine reassurance
8 strategies of the defendants?
9 A. Yes, it is.
10 MR. CIRESI: Your Honor, we'd offer Exhibit
11 12353.
12 MR. BERNICK: Oh, I'm sorry. No objection.
13 THE COURT: Court will receive 12353.
14 BY MR. CIRESI:
15 Q. "How many times have you decided to give up
16 smoking?
17 "Nobody these days is telling you not to give up
18 smoking.
19 "But if you've given it up more times than you'd
20 like to remember, the chances are you enjoy it too
21 much to want it give it up at all.
22 "If you're like a lot of smokers these days, it
23 probably isn't smoking that you want to give up.
24 It's some of that tar and nicotine you've been
25 hearing about.

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1 "So you tried cigarettes which were low in tar
2 and you found yourself checking every once in a while
3 to see if they were still lit. Which drove you right
4 back to your regular brand.
5 "Now, there is Vantage.
6 "Vantage cigarettes, either filter or menthol,
7 deliver considerably less tar and less nicotine than
8 most cigarettes.
9 "But what really makes Vantage special is our
10 special filter which allows the tobacco flavor to
11 come through.
12 "Vantage isn't the lowest tar and nicotine
13 cigarette, but it may well be the lowest one you'll
14 enjoy smoking.
15 "And that's what makes all the difference."
16 Is that another example of the advertising that
17 was consistent with the defendants' health-
18 reassurance strategy regarding low tar/low nicotine
19 cigarettes?
20 A. Yes, it was. One difference, and when you look
21 at these things you always see things that you didn't
22 see before. The difference between this ad and the
23 one before it is the one before it never mentioned
24 nicotine. It mentioned tar, but the only place
25 nicotine was in the Merit ad was in -- in the

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1 required labeling. This one it has nicotine
2 included, but the other one only talked about tar,
3 never talked about nicotine at all in the -- in
4 the -- in the narrative. Just an observation.
5 Q. Can you direct your attention, doctor, to
6 Exhibit 15287. That would be in volume two.
7 A. Okay.
8 Q. Is this another ad copy that you reviewed with

9 respect to the testimony you're giving in court?
10 A. Yes, it is.
11 Q. And does it form a part of the basis of your
12 opinion in this case?
13 A. It would.
14 MR. CIRESI: Your Honor, we'd offer Exhibit
15 15287.

16 MR. BERNICK: No objection.

17 THE COURT: Court will receive 15287.

18 BY MR. CIRESI:

19 Q. "AT LAST, A low tar, in quotes, and nicotine
20 cigarette with flavor enough to say...'taste me.' .
21 "New Doral. A whole new kind of low 'tar' and
22 nicotine cigarette with a whole new kind of filter
23 system. Cellulon fiber to reduce 'tar' and
24 nicotine...and a strange-looking polyethylene chamber
25 with baffles and air channels. You'd need a

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1 scientist to explain it. But Doral says it all in
2 just two words: 'taste me'."

3 Is this the type of ad that was consistent with
4 the defendants' low tar/low nicotine health
5 reassurance campaign?

6 A. Yes, it is.

7 Q. Then the last ad, doctor, could you turn to
8 15366.

9 A. Okay.

10 Q. This is another Vantage ad, and that's also RJR.
11 Is this one of the ad copies that you reviewed which
12 forms a part of the basis of your opinion?

13 A. Yes, it is.

14 Q. And did you rely on this for your review of the
15 defendants' documents?

16 A. Yes.

17 MR. CIRESI: Your Honor, we'd offer Exhibit
18 15366.

19 MR. BERNICK: No objection.

20 THE COURT: Court will receive 15366.

21 BY MR. CIRESI:

22 Q. And does this incorporate, doctor, some of the
23 ad copy that we saw in Exhibit 12353, the other
24 Vantage?

25 A. Yes, it does.

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1 Q. Okay.

2 A. Very similar.

3 Q. And again, is this consistent with the
4 defendants' position with respect to their
5 reassurance low tar/low nicotine cigarette marketing?

6 A. Yes, it is.

7 Q. Can you turn, doctor, to Exhibit 11203, which is
8 in volume one.

9 A. Okay. Okay.

10 Q. This is a B.A.T document dated January 19th,
11 1977. Is this one of the documents you reviewed in
12 this case?

13 A. Yes, it is.

14 Q. And does it form part of the basis of your
15 opinion in this case?
16 A. Yes, it does.
17 Q. And does it deal with the subject matter that
18 you found in the other defendants' documents that
19 you're testifying upon here?
20 A. Yes, it does.
21 MR. CIRESI: Your Honor, we would offer
22 Exhibit 11203.
23 MR. BERNICK: No objection.
24 THE COURT: Court will receive 11203.
25 BY MR. CIRESI:

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1 Q. This is dated January 19th, 1977, "SMOKING
2 PRODUCTS RESEARCH, 25th October, 1976 to 21st
3 January, 1977." And the distribution list we see
4 down below to Dr. Ayers, A-y-r-e-s, and D. J. Wood.
5 A. Yes.
6 Q. Can you direct your attention to paragraph
7 three, "Smoking Behavior of Low Delivery Cigarettes."
8 "Two cigarette brands, 'Now', paren, U.S.A.,
9 close paren, and 'Reemtsma No. 1', with very low
10 deliveries of TPM and nicotine, have been smoked by
11 subjects whose manner of smoking was monitored. The
12 subjects smoked two brands -- these two brands with
13 greater intensity than they smoked cigarettes of more
14 normal delivery, taking larger puffs at more frequent
15 intervals. From each brand, the subjects on average
16 took more than twice the volume of smoke that was
17 taken by a standard smoking machine. This emphasizes
18 the misleading nature of published smoke deliveries
19 when dealing with cigarettes of this type."
20 Now the published smoke deliveries are the ones
21 that we saw in the ads?
22 A. That's correct, in the little box.
23 Q. And the smoking machine, is that what you were
24 describing earlier in your testimony?
25 A. That's correct. That's the FTC method, the

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1 smoking machines.
2 Q. And in your review of others of the defendants'
3 documents, did you find that they also had this type
4 of information with regard to the misleading nature
5 of those deliveries?
6 A. Absolutely.
7 Q. Can you turn to Exhibit 11390, which is in the
8 same volume, doctor. Actually it's the next exhibit.
9 A. Okay.
10 Q. Is this another B.A.T document prepared by Mr.
11 Green, who was a senior scientist, dated 26th of
12 August, 1977?
13 A. Yes.
14 Q. And does this also deal with the misleading
15 nature of the advertised deliveries?
16 A. Yes. It's under item four.
17 Q. And is this one of the documents that you
18 reviewed in this litigation for the purpose of

19 testifying?
20 A. Yes, it is.
21 Q. And it is --
22 Is it one of the documents that you have relied
23 on in part in forming the basis of your opinions?
24 A. Yes, it is.
25 MR. CIRESI: Your Honor, we would offer
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1498

1 Exhibit 11390.
2 MR. BERNICK: No objection.
3 THE COURT: Court will receive 11390.
4 BY MR. CIRESI:
5 Q. First of all, it's dated August 26th. Do you
6 see that up in the right-hand corner? And it says
7 "SUGGESTED QUESTIONS FOR CAC.III." Do you know what
8 CAC is?
9 A. I can't remember right now. Chairman's Advisory
10 Committee.
11 Q. Okay. And --
12 A. Which I assume is the chairs -- chair --
13 chairman I think is the term.
14 Q. All right. Chairman's Advisory Committee of
15 B.A.T; is that right?
16 A. Right.
17 Q. All right. Can you look down at number four.
18 "Should we market cigarettes intended to reassure the
19 smoker they are safer without assuring ourselves that
20 indeed they are so or are not less safe? For example
21 should we 'cheat' smokers by 'cheating' league
22 tables? If we are prepared to accept that the
23 government has created league tables to encourage
24 lower delivery cigarette smoking and further if we
25 make league table claims as implied health claims --
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1 or allow health claims to be so implied -- should we
2 use our superior knowledge of our product to design
3 them so that they give low league table positions but
4 higher deliveries on human smoking?"
5 First of all, what's a league table?
6 A. A league table is -- is kind of like the Federal
7 Trade Commission ratings, but it was -- this is the
8 tables that were used in -- in Britain. So it's the
9 rating of the smoking machine, if you will.
10 Q. So that's the tar and the nicotine that we saw
11 in the ads.
12 A. That's correct, yes.
13 Q. Can you go down to the next paragraph then, last
14 one. "Are smokers entitled to expect that cigarettes
15 shown as lower delivery in league tables will in fact
16 deliver less to their lungs than cigarettes shown
17 higher?"
18 Now the preceding document, doctor, that showed
19 that on the low tar/low nicotine cigarette, people
20 didn't get less; is that right?
21 A. That's correct.
22 Q. And based upon your experience in your clinic,
23 is that consistent with your experience?

24 A. Yes.
25 Q. And did the defendants have knowledge of that
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1500
1 for many years based on your review of their
2 documents?
3 A. Yes. This is over 20 years old.
4 Q. Did they ever advertise --
5 Did you see any advertisements in their
6 documents, "The tables are wrong. You get more tar
7 and nicotine than set forth on these documents?" Did
8 they ever say anything like that?
9 A. Not to my knowledge.
10 Q. Do you know if they ever admitted that publicly
11 to tell the consuming public that's what the fact
12 was?
13 A. Not to my knowledge.
14 MR. BERNICK: Objection, lack of
15 foundation, Your Honor.
16 THE COURT: Yes. You'll have to rephrase
17 that, counsel as it relates to the documents he
18 reviewed.
19 BY MR. CIRESI:
20 Q. To your knowledge, based on the documents that
21 you reviewed in this case, did you ever see any of
22 these defendants tell smokers of low tar/low nicotine
23 cigarettes, "You're going to get more than what's
24 stated?" Ever say that?
25 A. No. Quite the opposite.
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1501
1 Q. Did they ever advertise and say, based on your
2 review of the documents, "Smokers, you're
3 compensating and your disease risk is not going
4 down?" Did they ever say anything like that?
5 A. Not at all.
6 Q. Did they ever say, based on your review of the
7 documents, "You should have a fully informed choice,
8 and we want to tell you what we know about
9 compensation?" Anything like that?
10 MR. BERNICK: Your Honor, I object. At
11 this point Mr. Ciresi is arguing, he's not asking a
12 question. Object to the form of the question.
13 THE COURT: Sustained.
14 Q. Did you see any of their documents that ever
15 said that "We want you to have a fully informed
16 choice?" Any document like that?
17 MR. BERNICK: Same -- same problem.
18 Indeed, this now is an even broader question and
19 broader argument.
20 THE COURT: It's broad enough so it's not
21 argumentative, so I'll let him --
22 MR. CIRESI: I'll withdraw it, Your Honor.
23 THE COURT: All right.
24 BY MR. CIRESI:
25 Q. Doctor, can you direct your attention to Exhibit
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1 11564?

2 A. Okay.

3 Q. Philip Morris document dted seven -- September
4 17th, 1975, from Barbro Goodman, a scientist, to the
5 director of research and development, Mr. Leo F.
6 Meyer.

7 Is this one of the documents that you reviewed?

8 A. Yes, it is.

9 Q. And the subject is "Marlboro -- Marlboro Lights
10 Study Delivery Data?"

11 A. Correct.

12 Q. And does this document form part of the basis of
13 your opinion?

14 A. Yes, it does.

15 MR. CIRESI: Your Honor, we would offer
16 Exhibit 11564.

17 MR. BERNICK: No objection.

18 THE COURT: Court will receive 11564.

19 BY MR. CIRESI:

20 Q. Doctor, I'd like to direct your attention to the
21 first part of the discussion section of this
22 document. "The smoker profile data reported earlier
23 indicated that Marlboro Lights were not smoked like
24 regular Marlboros. There were differences in the
25 size and frequency of the puffs, with larger volumes

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1 taken on Marlboro Lights by both regular Marlboro
2 smokers and Marlboro Lights smokers."

3 Is this the type of data that was consistent
4 with what you were finding in the defendants' files?

5 A. Yes. This is called compensation.

6 Q. Now this appears to be a small study. I think
7 they had nine smokers in this study; is that right?

8 A. Correct.

9 Q. Okay.

10 A. Next sentence.

11 Q. In each of the defendants' files, did you find
12 knowledge of this compensation issue?

13 A. Yes.

14 Q. Can you turn, doctor, to Exhibit 10683, which is
15 a B.A.T document.

16 A. Say the number again.

17 Q. 10683.

18 A. Okay.

19 Q. I believe this document is in evidence, but I
20 should check. It is.

21 Could you direct your attention, doctor, to that
22 page which bears the last three Bates numbers 499.

23 A. Okay.

24 Q. And in your review of the defendants' documents,
25 did you find some of the employees of the defendants

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1504

1 question whether compensation did in fact take place?

2 A. Sure. There were -- there were some who did
3 that.

4 Q. Okay. And if you look at this document, in the

5 middle of page 499 is there reference to that type of
6 opinions held by some within the tobacco companies?

7 A. That's correct, yes.

8 Q. And it states as follows: "The conclusion must
9 be that while puffing, this smoker is increasing his
10 puff volume -- and thus his tar intake, possibly from
11 the current machine delivery, approximately 19
12 milligrams tar, up to the 35 milligrams or so of his
13 youth. Many people will tell you authoritatively
14 that, on sound statistical analysis of well designed
15 experiments, low tar smokers do not compensation.
16 Rubbish. The findings are valid, but the choice of
17 smokers probably was not."

18 And he goes on to state, "Observation of my
19 mother-in-law tends to confirm" that, and he talks
20 about a little test he conducted on his
21 mother-in-law.

22 Now, in looking at these documents, did you have
23 any doubt that all of the defendants knew about the
24 effect of compensation in low tar/low nicotine
25 cigarettes?

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1505

1 A. They all knew, and for a long time.

2 Q. And in this document here, Mr. Greig, when he
3 conducted the experiment on his mother-in-law, he
4 found the same thing; isn't that right?

5 A. That's correct.

6 Q. And he actually arrived at a conclusion about
7 providing the satisfaction and keeping some of the
8 smokers unsatisfied; didn't he?

9 A. Right.

10 Q. Could you turn to the last page, the summary. I
11 believe one of the defense attorneys referred to King
12 James and his famous "Counterblaste to Tobacco" in
13 the 1600s. Let me read the summary of Mr. Greig's
14 memo. "So -- give them what they seem to want taste
15 and value. And always remember that, while King
16 James I issued his famous 'Counterblaste to Tobacco',
17 in 1604, it is nicer from our point of view to
18 remember Oscar Wilde's words in 'The Picture of
19 Dorian Gray' in 1891:

20 "A cigarette is the perfect type of a perfect
21 pleasure.

22 "It is exquisite, and it leaves one unsatisfied.
23 What more can one want.'.

24 "Let us provide the exquisiteness, and hope that
25 they, our consumers, continue to remain unsatisfied.

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1506

1 All we would want then is a larger bag to carry the
2 money to the bank."

3 Did you see other sentiments like that in
4 defendants' documents, sir?

5 A. That was pretty eloquent, but there are
6 sentiments like that.

7 Q. Can you direct your attention to Exhibit 12648.

8 A. Okay.

9 Q. Let me go back to the B.A.T memo for a moment,

10 the money in the bag. B.A.T, that was the same
11 company that sent the people over in 1958 to do that
12 survey of everybody, and they found out that
13 cigarette caused lung cancer?

14 A. Yeah, that's correct.

15 Q. Okay. Did you find any documents or review any
16 documents in B.A.T's files which said maybe we should
17 have some concern about the people who are dying from
18 this disease? Any -- any expressions of concern you
19 found?

20 MR. BERNICK: Your Honor, this again is
21 argumentative.

22 THE COURT: Sustained.

23 BY MR. CIRESI:

24 Q. Let me direct your attention, then, doctor, to
25 Exhibit 12648. This is an RJR document dated July
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1507

1 25th, 1983 by J. H. Robinson, one of their top
2 scientists, to Dr. Alan Rodgman, another of their top
3 scientists.

4 Is this a document that you've reviewed?

5 A. Yes, it is.

6 Q. Does it form part of the basis of your opinion?

7 A. Yes, it does.

8 Q. And does this relate to how smokers smoke in
9 relationship to the FTC smoking machine that you
10 demonstrated illustratively for the jurors?

11 A. Yes, it does.

12 MR. CIRESI: Your Honor, we would offer
13 Exhibit 12648.

14 MR. BERNICK: No objection.

15 THE COURT: Court will receive 12648.

16 BY MR. CIRESI:

17 Q. I'd like to direct your attention to the second
18 paragraph, right below the word "The cotinine
19 determination," and it says "The paper itself...."

20 " The paper itself expresses what we in
21 Biobehavioral have 'felt' for quite some time. That
22 is, smokers smoke differently than the FTC machine
23 and may very well smoke to obtain a certain level of
24 nicotine in their bloodstream."

25 Is that consistent with what you found in the
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1508

1 defendants' documents with regard to --

2 A. Yes.

3 Q. -- the difference between the FTC machine and
4 smoking?

5 A. Yes, it is.

6 Q. And if you go down to the final paragraph,
7 there's the following reference. "Finally, the data
8 reported in this paper reminded us of the HMSM
9 experiment done with the German Camel and Marlboro
10 cigarettes. While there were certain imperfections
11 in this experiment, you may recall that the smokers
12 apparently obtained almost exactly the same amount of
13 nicotine no matter which of the four cigarettes they
14 smoked. This was one of the first indications that

15 smokers may in fact smoke to obtain a certain level
16 of nicotine in their bloodstream."

17 And again, is that consistent with the type of
18 documents you found in the defendants' files?

19 A. Yes, it is.

20 Q. And this document goes back to 1983; correct?

21 A. Correct.

22 Q. I'd like to direct your attention, doctor, to
23 Exhibit 11089.

24 A. Eleven --

25 Q. 089.

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1509

1 A. 089. Okay.

2 Q. This document I believe is in evidence. No?

3 Oh.

4 Is this one of the documents you reviewed,
5 doctor?

6 A. Yes, it is.

7 Q. And it's a BATCo, Ltd. document dated 27th of
8 June, 1978?

9 A. Yes, it is.

10 Q. And does this document form part of the basis of
11 your opinions?

12 A. Yes, it does.

13 MR. CIRESI: Your Honor, we'd offer Exhibit
14 11089.

15 MR. BERNICK: No objection.

16 THE COURT: Court will receive 11089.

17 BY MR. CIRESI:

18 Q. And does this also deal with the issues of
19 compensation and the difference between smoking by an
20 individual smoker and smoke yields off of an FTC
21 machine?

22 A. Yes, it does.

23 Q. Okay. Can you direct your attention to the
24 first page and about halfway through the first
25 paragraph. "If, for example, the smoker takes more

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1510

1 puffs or larger puffs from a lower brand, then it is
2 possible for him to take the same or even greater
3 weights of tar and nicotine from the lower delivery
4 brand than from his own brand. This process of
5 adjusting the delivery of a brand by changing the way
6 in which it is smoked by a smoker is referred to as
7 'Compensation'."

8 A. Correct.

9 Q. Okay. That's the issue we've been discussing?

10 A. That's right.

11 Q. And this is a 1978 document of B.A.T; correct?

12 A. Correct.

13 Q. And it's consistent with what you saw in the
14 defendants' documents.

15 A. Correct.

16 Q. And if you turn to the next page, page two,
17 there's reference to the observations made by
18 the B.A.T's -- BATCo scientists between a smoker
19 smoking a cigarette and the smoking patterns on a

20 smoking machine. Do you see that?
21 A. Yes, I do.
22 Q. The top of the page. "During the last 10
23 years," goes back to 1968, "smoking pattern data have
24 been recorded from several hundreds of smokers in
25 Southampton." Now I believe Southampton is one of
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1511

1 the research facilities of BATCo?
2 A. Yes. It's in England.
3 Q. "No smoker has yet been observed who smokes with
4 the same pattern as a smoking machine."
5 Is that consistent with what you know about
6 smoking?
7 A. That's correct.
8 Q. "For the purpose of this discussion and on the
9 basis of the standard machine smoke deliveries,
10 compensation may be defined as:
11 "Subconscious changes made to the smoking
12 pattern by a smoker in an attempt, which may or may
13 not be successful, to equalize the deliveries of
14 products which have different deliveries when smoked
15 by a machine under standard conditions."
16 Is that the concept as you understand it,
17 doctor?
18 A. That is compensation.
19 Q. And is that the concept as it was defined and
20 articulated in others of the defendants' documents?
21 A. That's correct.
22 Q. And is there a further statement that the
23 numerous experiments that have been carried out over
24 the last ten years have been confirmed in Hamburg and
25 Montreal? In the third full paragraph. "Numerous
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1 experiments...."
2 A. Yes.
3 Q. "Numerous experiments have been carried out in
4 Hamburg, Montreal and Southampton within the company,
5 as well as many other experiments by research workers
6 in independent organizations, that show that
7 generally smokers do change their smoking patterns in
8 response to changes in the machine smoked delivery of
9 cigarettes."
10 Again, that's consistent with what you found,
11 sir?
12 A. Yes, it is.
13 Q. And can you turn to page nine. And is there an
14 expression there of the thought that lower delivery
15 cigarettes are really not delivering lower tar?
16 A. Yes, but I can't find it right off.
17 Q. If you could direct your attention to "it is
18 difficult to ignore...."
19 A. Yes, there it is.
20 Q. Let me read that. "It is difficult to ignore
21 the advice of Health Authorities who advise smokers
22 to give up smoking or change to a lower delivery
23 brand, but there is now sufficient evidence to
24 challenge the advice to change to a lower delivery

25 brand, at least in the short-term. In general a
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1 majority of habitual smokers compensate for changed
2 delivery, if they change to a lower delivery brand
3 than their usual brand. If they choose is a lower
4 delivery brand which has a higher tar to nicotine
5 ratio than their usual brand, paren, which is often
6 the case with lower delivery products, close paren,
7 smokers will in fact increase the amounts of tar and
8 gas phase that they take in, in order to get the same
9 amount of nicotine. More realistic advice to smokers
10 would be to choose a brand with a lower tar to
11 nicotine ratio which gives them the satisfaction that
12 they require in the lowest amount of smoke taken in.
13 However, as mentioned above, there are problems in
14 producing cigarettes with changed tar to nicotine
15 ratios that are acceptable to smokers."

16 Do you find that to be consistent with opinions
17 held by the defendants?

18 A. Yes.

19 Q. Can you turn to the next page, then, and is
20 there a concern expressed by the authors of this
21 report as to what would happen to their business if
22 they lowered the nicotine below the threshold
23 pharmacological dosage requirement?

24 A. Yes, and that would be the smokers would -- they
25 say would -- the smoking habit would be rejected by

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1514

1 the majority of smokers.

2 Q. Let me read that. "If delivery levels are
3 reduced too quickly or eventually to a level which is
4 so low that the nicotine is below the threshold of
5 pharmacological activity then it is likely that the
6 smoking habit would be rejected by the majority of
7 smokers. It is not known where this threshold
8 between just acceptable and rejection lies. It is up
9 to the manufacturers to survey their territories to
10 determine where the cut off point is for customers as
11 the acceptable delivery level varies from country to
12 country (for example the levels in Germany are about
13 half the levels in Great Britain).

14 "Medical pressures may force manufacturers to
15 change the range of their product deliveries. It is
16 up to us to modify the products in such a way that
17 they do not lose their appeal. However, there may be
18 practical lower limits to certain of the delivery
19 products beyond which the product would be rejected."

20 Now doctor, during the period 1960s, '70s, the
21 '80s, even up to today, have the manufacturers, based
22 on your review of the documents, looked at reducing
23 tar and nicotine while at the same time maintaining
24 the psychological kick to keep smokers addicted?

25 A. Yes, they have. And the technology that we

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1515

1 talked about is more free base nicotine.
2 Q. Doctor, in your opinion, what impact have low
3 tar/low nicotine cigarettes had on the public health?
4 A. It has -- it has encouraged people who would
5 otherwise try to stop smoking to continue to smoke.
6 It's reassured people that they're smoking a safer
7 cigarette when they really are not. So it's been
8 detrimental to the public health.
9 Q. Based on your education, training, experience
10 and expertise in the field of smoking and health, and
11 the defendants' documents, do you have a opinion to a
12 reasonable degree of medical certainty whether
13 nicotine is an addictive drug?
14 A. It absolutely is.
15 Q. And based on your education, training,
16 experience and expertise in the field of smoking and
17 health, and the defendants' documents, do you have a
18 opinion to a reasonable degree of medical certainty
19 whether the defendants knew they were selling an
20 addictive drug?
21 A. They absolutely were. And they knew.
22 Q. And based on your experience, training,
23 expertise, and a review of the defendants' documents,
24 do you have a opinion to a reasonable scientific
25 certainty whether nicotine in free base form in smoke

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1 maximizes the potential to addict smokers?
2 A. It does.
3 Q. Based upon your experience, training and
4 expertise, and on your review of the defendants'
5 documents, do you have a opinion with scientific -- a
6 reasonable degree of scientific certainty, whether
7 the defendants intentionally misrepresented the
8 health risks of smoking by maintaining low tar/low
9 nicotine cigarettes as health-reassurance products?
10 MR. BERNICK: Your Honor, the same
11 objection as before. I believe the court has ruled
12 on this.
13 THE COURT: I think the question is a
14 little different, counsel. I'll allow him to answer.
15 THE COURT: Would you repeat the question?
16 Q. Yes. Whether the defendants intentionally
17 misrepresented the health risks of smoking and
18 marketing low tar/low nicotine cigarettes as health-
19 reassurance products.
20 MR. BERNICK: The same objection as before.
21 This invades the province of the jury and exceeds his
22 expertise. This is a matter for the jury to decide.
23 THE COURT: Sustained.
24 Q. Do you have an opinion based upon your
25 experience and expertise, your training, and the

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1517

1 defendants' documents, whether or not the defendants
2 represented that low tar/low nicotine cigarettes were
3 health-reassurance products?
4 A. Yes, they did.
5 Q. And based upon your experience, training and

6 expertise, and your review of the defendants'
7 documents, do you have an opinion -- an opinion
8 whether the defendants, during the course of the past
9 40 years, have followed a strategy of creating doubt
10 about the health risks of smoking?

11 A. They absolutely have.

12 Q. And based upon your experience, training and
13 expertise and upon your review of the defendants'
14 documents, do you have a opinion to a reasonable
15 degree of scientific certainty, medical certainty,
16 whether the defendants' actions were a substantial
17 contributing cause to people smoking?

18 A. It was.

19 MR. BERNICK: Objection, Your Honor, lack
20 of foundation.

21 THE COURT: No, you may answer that.

22 A. Yes, it was.

23 Q. And do you have a opinion, doctor, based upon
24 your experience, training and expertise, whether free
25 base nicotine can enter the bloodstream faster

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1518

1 than --

2 A. Yes.

3 Q. -- protonated nicotine?

4 A. Yes, it can.

5 MR. CIRESI: Thank you, doctor. I have no
6 further questions.

7 THE COURT: We'll adjourn for the day,
8 reconvene tomorrow morning at 9:30.

9 THE CLERK: Court stands adjourned.
10 (Court recesses.)
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